THE AMERICAN ARCHITECT

VOL. CXVIII WEDNESDAY, NOVEMBER 24, 1920 NUMBER 2344

"What Is the Matter with The Building Industry?"

Proceedings and Impressions of the Autumn Meeting of the New York State Association of Architects, Held at the Academy Room, Fine Arts Building, in the City of New York, November 12, 1920

"In industry, those who work with their hands co-operate to produce the things which all of us need. If conflict and disunion take the place of co-operation, wealth production is hindered and everything the community requires is rendered less abundant and more costly. To secure this harmony of interest is the master problem of the modern industrial state.

"This is the definition of the meaning of the English Guild in the building industry, but it can be made to do service as a definition of that kind of co-operation which is now making its appeal to our own building industry. . . .

"Our industry demands organization, organization demands direction, direction demands conference, conference demands compromise, compromise demands self-subordination, and self-subordination demands courage of the highest order."

—From the Address of Mr. Louis Comstock.

THERE is no better nor more fitting summary of the spirit and essence of the fourth annual meeting of the New York State Association of Architects than the quotation given above from the address of Mr. Louis Comstock. The autumn meeting of 1920 was given particularly to a full and elaborate discussion of the question which appears at the top of this page, and addresses by men prominent in architecture and allied industries were delivered in more than usual detail; but throughout every address, and constituting the greater portion of the majority of the addresses, there was distinctly evident the thought expressed so clearly in the quotation from Mr. Comstock's admirable paper. Representatives of the general contractor, the sub-contractor, and the employer; a well known superintendent of construction; a member of the bureau of industrial research, and officials of the New York Chapter of the American Institute of Architects and the New York Society and State Association all indicated clearly, in the seven hours of discussion, that above materials, above labor, above transportation, above all physical facts which might be termed contributory causes to the present housing situation, the matter of co-operation, on such a basis as Mr. Comstock put it, was, after all, the big and fundamental thing.

There were two sessions, one at 10.30 in the morning and the other at 2.30 in the afternoon, but, as a matter of fact, it amounted to practically one session, the total discussion lasting more than seven hours.

The morning session was devoted to the president's address, in which Mr. Waltz distinguished himself by delivering the shortest presidential address within the memory of man. Following Mr. Waltz's admirable brevity, an informal discussion on "The Housing Situation" was opened by Mr. Burt L. Fenner, president of the New York Chapter of the American Institute of Architects.

MR. FENNER prefaced his remarks by reference to those persons who had preached military preparedness for this country, and who had been frowned upon as either fanatics or visionaries, and likened them to the architects who long ago foresaw a housing shortage of the present nature and preached their doctrines of preparedness unto deaf ears.

"So that today we have commissions and committees without number," Mr. Fenner said, "which have studied and worked over this problem with so infinitely small a result that it seems such study is now a perfectly futile affair. Yet I do not regard it exactly in that light, for it shows that the public, the great mass of laymen, of wage earners, of the middle class, if you will, is thinking today concerning problems to which it never before has given the slightest regard.

"The reasons for the situation are without number, but fundamentally I believe it to be due to transportation and finance. If you cannot move materials, and if you cannot borrow money with

Copyright, 1920, The Architectural & Building Press (Inc.)

which to build, it is almost futile to attempt anything constructive. . . .

"It seems as if the old machine, the old system, had broken down. It is my personal belief that ultimately we shall have to design a new machine. The old one has failed us. . . .

"As the first steps toward immediate relief, I propose car priorities for the shipment of materials and pressure exerted on the banks to induce or force them to lend for building purposes. I hope capital will be willing to forego some of its present profits in order that money may flow into the building industry. . . ."

"Do you favor state aid for either credit or construction?" Mr. Fenner was asked by Mr. Robert D. Kohn, vice-president of the New York State Association of Architects.

"I most certainly favor state aid for credits, and I am unalterably opposed to state aid in construction," was the reply. "I hope the government will go into the matter on a regulatory basis. I trust it will study the problem thoroughly, that it will test every theory, that it will conduct both research and experiment.

"But every official or governmental bureau, commission or committee which has gone into the matter so far, with the exception of the Reconstruction Committee of this state, has failed to see the problem as a sociological problem, and has accomplished practically nothing.

"In other words, the system has fallen down. We need a new machine."

In the discussion which followed, so many opinions were voiced regarding Mr. Fenner's assertion that the "machine had broken down" that it would be almost futile to record each speaker's views. Opinion seemed rather well inclined toward the veracity and solidity of Mr. Fenner's contention regarding the failure of the present scheme of building for profit, and it was generally agreed that England's housing schemes, whereby profit has been totally or largely eliminated by the guild system, was the best sort of solution for the problem.

"It is only natural," Mr. Frederick L. Ackerman stated, "that we must ultimately come to England's solution of the matter. Credit, after all, is not so important in this problem. The vast volume of credit goes to the highest yields, and rightly so, as I see it. Any other scheme would ultimately lead to the depreciation of government securities. . . .

"When the building industry is organized merely for profit, sabotage will exist from top to bottom. We can not expect one thing from one group and not render it ourselves. . . . So long as we are out to render ineffective any labor organization, we will find ourselves faced with failure.

"We may as well look the problem squarely in the face and admit that the old method of profit has failed."

PRESIDENT WALTZ introduced Mr. Ordway Tead of the Bureau of Industrial Research, who was scheduled to speak on "What Is Being Done in the Building Industry in England." We regret that space forbids the reprinting of Mr. Tead's admirable address in full. Briefly, it was as follows:

"England realized that there must be very solid and fundamental causes for the housing shortage, and, after exhaustive investigation of the matter by both governmental and private agencies, the so-called Foster report was submitted, which gave as the reasons:

"1. The fear of unemployment (English workingmen have been stressing reasonably full time employment at a reasonable wage).

"2. The failure of the private profit motive to interest the laborer in his work.

"3. The failure of the private profit motive to give the laborer any incentive for pride in the job as a whole.

"4. The inefficiency of the employers.

"Out of the four principal schemes evolved to meet and remedy these conditions the building trades guilds have proven most successful and efficient. Membership in these guilds consist of men who have volunteered to work upon construction work without profit, that is, without private profit. A National Builders' Guild has been formed, and it is the duty of this guild to:

"1. Standardize the purchase of materials.

"2. Regulate compensation, from the salaries of the directive heads of any building operation to the merest hod carrier.

"3. To co-operate with the Ministry of Health in its program of housing, and with local authorities in their individual problems.

"4. To unify building programs, and directly supervise them, on a non-profit basis.

"This scheme has worked wonders for England and her housing problem. There can be no doubt of its success there, and the guilds have proved to the government that they can build cheaper under their no-profit, direct-labor system than under any other existing system. So far as present records are concerned, more houses have been built in the last 6 months in England than in any other 5 previous years. Nor is this due merely to the stringency of the situation. The old private profit order of things could never have produced like results, because men will not work so well for the other fellow as they will for themselves. That is human nature, the very law of human nature, and it is

upon that law that the building guild has founded its success.

"The system has its application to our problem, because it (a) organizes to assure productivity; (b) organizes to get something out of a building program for the worker, and (c) it most certainly organizes to get something out of a building program for the public, which is constituted, in the main, of the workers themselves.

"Now, as to these contentions. Productivity is assured when workers are producing something directly for their fellow-man without any intermediary, which in our country is summed up in the architect-contractor group. It produces something for the worker because he knows absolutely that the house he is building is being put up at cost, with profit to no 'boss.' It produces something for the public in that it gives the public completed homes at a reasonable figure, with not the slighest suspicion that any portion of that figure has been eaten up by any individual or corporation in what some persons term 'useless profit.'

"I call these things to your attention in the hope that they may be of service in the stimulation of thought along the guild problem."

And "these things" did stimulate thought, as was immediately shown, at the conclusion of Mr. Tead's address, by several members who offered resolutions regarding the soundness of a "no-profit" basis for the building industry. Hearty objections were entered against any such resolution, and, as one member put it, "you can't turn the economic scheme upside down by a mere resolution. Building has always gone on under a system of profit for the builder, and it will continue to do so, or else the builder will pass quietly from the business world."

Nevertheless, there were those who distinctly favored the no-profit theory, which meant that they were willing that architects and contractors should be paid a stated compensation for their services rather than fees (for the architect) or profit (for the contractor, under the competitive bid system). Several members proposed various resolutions, but it was finally agreed that the matter was far too serious to permit of extemporaneous resolutions, and a committee was appointed by the president to draw up a suitable resolution on the matter and present it at the opening of the afternoon session.

With that the session adjourned to repair the ravages wrought by discussion and hunger.

The Afternoon Session.

PRESIDENT WALTZ'S gavel had hardly rapped for order at the opening of the afternoon session before Mr. Kohn, as chairman of the Resolution Committee appointed in the morning by the president, claimed the privilege of the floor for the purpose of reading the resolution which the committee had drawn up relative to the guild system as a possible solution of the housing problem in this country.

"Whereas," Mr. Kohn read slowly, while members strained to hear every word of as important and novel a resolution as this one was, "The housing situation in almost every community of the state is extremely serious and practically no new houses are being built because such building offers no profit, and

"Whereas, It is evident that the dependence of profit making as an inducement for the housing of of all the community has failed,

"Therefore Be It Resolved, That we must try to find a new viewpoint leading to new methods, and that we start the essential educational process leading to such methods by encouraging the people themselves and the workers to organize their own powers in credit and work to build for themselves without profit to any intermediary."

The discussion which followed was unquestionably the most argumentative of the day. It would not be possible to put down here the names of all who spoke. Suffice it merely to state briefly the views of the two principal factions.

In favor of such a program: Absolutely sound, they maintained. Building for profit is at a standstill today. Everything is lacking. The best the architect and builder can make of the present situation is to encourage any sort of co-operative action among those who otherwise might be his client; to discourage competition. In short, anything, so long as houses actually go up. That, not profit, was the problem.

Opposed to such a program: Utterly absurd. The world, from the time of earliest barter, had depended for advancement upon competitive effort. Co-operation of that sort meant suicide for the architect. The problem was not merely one of building, but one of a continued existence for architects. Competition furnishes that existence. Profit is always the problem with architects or any business man. Profit is the basis of the economic structure. Take it away and the structure collapses.

But the meeting could not come to any agreement upon the resolution, and it was voted to postpone further discussion of it until after the invited speakers had finished with the set topic. This was done. (And at the end of the meeting, when the resolution again came up for discussion, it was tabled until the association should meet again.)

THE discussion of the afternoon's topic then began. It was first outlined in short addresses by Mr. Robert D. Kohn; Mr. J. Riley Gordon,

president of the New York Society of Architects, and Mr. William P. Bannister, representing the Brooklyn Chapter of the American Institute of Architects.

Mr. Kohn emphasized the fact that we have been wasting a great deal of time in seeking to emulate Nast's famous cartoon of Tammany Hall, and that it is absurd to be constantly blaming the other fellow for conditions which exist in the building industry rather than put some of the blame "on ourselves."

"No one thing will get to the bottom of the situation. . . . There has never been a problem in the world's history which could be held aside and dispassionately credited to one factor . . . The Brindell investigation will not get to the bottom of the building industry and its ills. That is but an incident. The real thing, the necessary thing, is to establish a system of co-operation between the architect and every allied profession strong enough, and frank enough to insure the thorough investigation by ourselves into whatever may be the matter with our own profession."

Mr. Gordon, in his short address, defended the present attitude of the insurance companies and banks toward real estate investment. No one could blame a financial institution for lending money where interest was highest. It was and is and always will be, the law of supply and demand.

"I believe firmly in the soundness of that law, and I do not believe that arbitrary measures of any sort, legislative or what not, would in the slightest fashion ease the financial stringency in which real estate finds itself today. It is the duty of finance to lend where the most can be made upon any investment, and it is the duty of bank and insurance companies toward their customers to put the money of such institutions in the highest interest channels. That is the way things have run for generation after generation, and I do not believe that we can in any way change them. Until the problem of supply and demand with regard to real estate loans is fully met and worked out by the people themselves on a gradual, soundly economic basis, I can see no hope for influencing either capital or money into the building industry."

"The building industry is suffering from faulty metabolism," Mr. Bannister said in his opening remarks. "We are not functioning as an industry. We have not gotten rid of what is evil in our ranks. We are suffering from a cancer which has been growing into the industry's vital organs for some time, and instead of diagnosing the disease, we have been content to look upon it merely as a cold, when in reality it may be compared to the more serious pneumonia. . . . The polluted air which the industry has breathed has seriously affected its lungs."

WHETHER or not the meeting agreed with these remarks was not indicated at this part of the program. President Waltz proceeded at once to the introduction of the first of the invited speakers, Mr. Allen E. Beals of Dow's report on "Building Materials, Supply and Prices."

"On the day after the armistice," Mr. Beals began, "I received a telegram from Washington which asked this question: Are you in favor of letting down the bars on non-essential building?

"I wired back my answer, and it was no. I tried to give my reasons for such an answer. In the first place, I thought, and thought rightly, that an 'own your own home' movement would be inaugurated. That proved to be the case. Now, my organization had facts regarding the available building supplies in this country at that moment. We knew, for example, that we were short millions of barrels of cement, and that the industry could not hope to immediately swing into its old time production, plus over-production to meet the shortage. The same was true of brick and of every other building material. We knew that any 'own your own home' campaign would, with money as plentiful as it was, bring to the market a demand which could do nothing else except force prices to an abnormal level. That was inevitable, as you gentlemen can easily see.

"That is just what happened. A tremendous demand for building materials swept the country, and the demand could not begin to be met. Prices soared. Chaos began.

". . . what is the situation today? Kindly note these figures for building in the United States from 1911 to 1920.

Year	Cost of Buildings Constructed	Av. Cost Per Sq. Foot	Sq. Feet Built
1911...	$ 926,499,700	$1.59	605,000,300
1912...	1,027,515,200	1.63	630,000,400
1913...	980,971,600	1.61	609,300,000
1914...	891,845,500	1.55	577,000,400
1915...	931,937,300	1.52	613,100,000
1916...	1,103,160,900	1.82	624,000,800
1917...	816,941,000	2.27	358,000,000
1918...	492,163,900	2.65	185,700,000
1919...	1,467,821,300	3.20	458,600,000
1920*..	1,170,000,000	3.60	325,000,000
1919*..	871,000,000	3.20	278,000,000

* First nine months.

"Now, what do the figures show? In the first three years, from 1911 to 1913, a steadily decreasing total of square feet built and higher cost per square foot. In 1914 the cost of production per

square foot was low, but production was low. In 1915 the situation was beginning to show decided improvement, but in 1916 it became worse. The square foot cost was then $1.82, 30 cents more than 1915, and yet the increase in actual production was very small. In 1917 the square foot and total cost was way out of proportion to the production of square feet, and the following two years showed ever-increasing costs with constantly lessened production. The first nine months of this year have already totaled almost as much as 1919 in cost of building constructed, the price per square foot is higher than it has ever been, and the actual production is lower than it has ever been.

"Nothing sums the situation better than these cold figures.

"Let me give you some more of them; cement, for example. October showed the greatest production of cement ever recorded for a single month, so far as all available records show. That indicates a desire on the part of cement manufacturers to catch up with demand. Yet, in spite of that willingness to meet the deficiency, we will be 2,000,000 barrels short by March of next year. We are actually 1,600,000 barrels short at the present time, and out of an estimated yearly production of 95,000,000 barrels, 31,000,000, or just about a third, will have to go toward scheduled road improvements. That leaves you gentlemen only two-thirds of an under-production.

"Consider as common and necessary a thing as brick. There should be just about 600,000,000 brick in this market alone at this moment, but there are only 250,000,000 brick even within striking distance of the most sanguine contractor. More than half the brick supply is short. Do you believe that it can be met today, or tomorrow, or a few months after tomorrow?

"Think a moment of lumber. Is there sufficient lumber? There is not, as you know; and, what is more significant, there are no more cuts in this very necessary material.

". . . now all of you have different viewpoints. Some are hoping, I imagine, for a liquidation by labor. Let me tell you that labor will not liquidate. There is too much work to be had on the railroads, shipbuilding plants, and a thousand and one other places. Don't count on a liquidation by labor.

". . . The present position of materials men reminds me of the mules which they send down into mine shafts and bring up once every two years or so to clean. When a mule is brought to the surface, into the sunlight, they humanely attach blinders over his eyes.

"After the war the materials men were brought up to the sunlight, but there were no blinders . . . and the total result of that is just this: Your client unless he acts shortly on any proposed building scheme will be shut off from the market. Materials are at their bottom prices now. Cancellations have stopped, and that is significant. There will be no lower levels. I say that with a very full sense of every factor which goes into building materials.

"You have your choice between the 1912 'shoestringer' and loose credits, and between present conditions and tight credits. The latter is the better. Tight credits are an incentive, a help, a distinct advantage. Tight credits and the realization that the present prices are the real and permanent prices are what you should think over . . . and having thought it over, you will go to your client and say this:

" 'If you postpone building, you are in danger of finding yourself shut off from the market'."

Mr. Beals stopped there. Looking about the room, one could see faces which expressed everything from credulity to approval, from disbelief to belief. Everywhere there were whispers, and everyone seemed to be either agreeing heartily or disagreeing much more heartily. There appeared to be no "middle ground" of opinion. Either Mr. Beals was entirely correct or absurdly wrong. Figures were all right, in a way, but what did they show? Well, if figures couldn't prove the situation or give an indication of what might be expected, what on earth could? And so on, until President Waltz introduced Mr. W. G. Luce, of Hegeman-Harris Company, as the next speaker.

MR. LUCE presented the point of view of the general contractor. In an admirable paper, he gave one of the most sincere and well put appeals for co-operation between architects and the allied profession that it has been our good fortune to have heard in a long while. Space forbids its publication here in full, and no summary could do justice to it. We will refer only to that part of Mr. Luce's address which had to do with finance, because it is our opinion that he voiced an important sentiment.

"I wish to say a few words regarding finance. We all know how hard a thing it is to get money from a bank for building purposes. We all know also that the last annual convention of the American Bankers' Association passed a resolution to assist in this building problem. Yet what have the banks actually done? The aid given, as any man here can testify, has been meagre, due to prohibitive fees and commissions. I do not agree with some of the previous speakers that it is the duty of the bank to invest where interest runs highest or where greater profit is promised from the investment. The money in the banks is the money of a vast number of middle class depositors, and it is the middle class de-

XUM

positor who wants to build at present. It is the duty of the bank, as I see it, to operate for the depositor's good, and not for the bank's good. Think that statement over, if you please, and I believe you will get my viewpoint quite fully.

"Why, we ourselves put money into banks, and yet, when we want to borrow for some operation, we find we can't get our own money out for that purpose? Is that a bank's function?"

It was overwhelmingly the sentiment of the meeting that that indeed was not a bank's function, and that the banks had unjustly and unwisely discriminated against real estate and building loans. There were two or three stout defenders of the bank's position, who, like Mr. Ackerman, believed that any other course would have brought government bonds to an even lower depreciation, but, as several of the members pointed out, why should a bank put it upon its shoulders to maintain a governmental bond at a given value when the government itself had failed to do so?

President Waltz waited patiently until the discussion should subside sufficiently to introduce Mr. Louis Comstock, of L. K. Comstock & Company, who was scheduled to present to the meeting the viewpoint of the sub-contractor on the housing situation.

It was from Mr. Comstock's splendid address that the quotations given at the beginning of this review were taken. It was on "The English Guild," and it stressed, in every line, the importance of co-operation, of self-subordination, remarking that "discussions of this sort have been exceedingly rare in the industry." One paragraph particularly appealed as typifying the spirit of the whole paper. Here it is:

"Each group in the industry must have respect for every other, not lip respect, not respect that begins and ends with words, not respect for great names or great firms, but that kind of respect evidenced by a common acceptance of a forum where all things of common interest to the member groups of the industry may be discussed with reason and understanding."

At this point Mr. Bannister was asked by the president if he would not favor the meeting with an address, and Mr. Bannister, accepting the invitation to speak, faced the meeting very squarely and determinedly and spoke as follows:

"If an architect pays $1.00 for any service not rendered, he is doing harm to the profession as a whole. If an architect pays the contractor for anything not actually produced or delivered, he is doing harm to the profession. An architect who contributes to useless overhead does not live up to his public trust. And it is just as important that every allied profession keep close scrutiny on the other to stop at all times even a suggestion of useless overhead. We can get together only so far as we realize that there are in the profession practices which need to be stamped out, not by investigating committees, not by the law, but by us, by the architects and by the professional men allied with us in our great work."

Mr. Ronald Taylor, president of the Building Trades Employers' Association, followed Mr. Bannister. Hugh Frayne, organizer of the American Federation of Labor, who was scheduled to speak upon labor's side of the problem, found it impossible to be there. Consequently, only the employer's side of the labor problem was heard.

Characterizing the present labor situation as a natural outcome of what he termed the "backswash of the war," Mr. Taylor told of the formation of the Builders' Trades Employers' Association in New York and the effects of that association upon labor. Applied to other cities, it appears to us that a similar association would be of benefit if organized in the same manner and conducted as effectively and with as much care to the rights of labor as this association has seen fit to grant. Every dispute in the building trades' unions in New York City is now laid before the employers' association for settlement, and the word of that association is, as Mr. Taylor pointed out, final. This has been made possible by fair dealing and by continually seeking the confidence of the men.

"I am opposed to a centralized body such as we have in this city," Mr. Taylor said emphatically, "I believe in the autonomy of the various trades. I believe complete autonomy of the trades is necessary to every city.

". . . I have faith in labor, and here is one good reason for that faith. During the war, while I was in Washington, I had occasion to be at a meeting of a large number of members of the American Federation of Labor who had met to discuss the so-called Baker-Gompers agreement, the point of dispute being whether it applied only to non-union men or to both union and non-union men. The men believed, were positive, were howling that it applied only to union men. Had that been maintained, production all over this country would have been seriously cut. But it was not maintained. One of the leaders of that great federation stood up before thousands of husky, raw-boned men and said, in the deadliest tone I ever hope to hear: 'When you fellows convince me that the constitution of the American Federation of Labor is greater than the constitution of the United States, I'll see this thing your way.' And the talk on that matter was killed.

"But I feel that we have gone as far as we can in our present relations with labor," Mr. Taylor added immediately, "and in a few days it might be

right up to our association to determine our future relations. Within the week they have come to us with a demand for a dollar a day raise in pay. I can say that this will be voted down unanimously by the employers' association.

"We will then still face the proposition of whether to go to the American Federation of Labor and say: 'You have put a council in New York City, headed by men who have been proved lacking in character and honesty and we wish to know whether there is any possibilty of our getting a representative body with which we can honestly deal.' If we can get that, it may be the best solution.

"Or it may be possible that after December 31, when some of the agreements expire, it may be best for us to state our rates of pay, conditions, etc., without saying anything about unionism or non-unionism, whether a man is white or black or anything about his race or religion."

Mr. Taylor said he believed in the eight-hour day and double pay for overtime. He said he believed the unions should give back autonomy to each trade. Another difficulty, he said, was a shortage of men in certain trades.

"I feel confident that the problem will be solved," he said. "I think the present trouble is a backwash of the war."

The next speaker emphasized repeatedly that he had faith in labor. He was Robert Glenn, of Todd, Irons & Robertson, Inc., who spoke of his experience as superintendent in charge of construction of the Cunard Building. While such a matter is necessarily local, and therefore of little value to the reader of this journal, it is yet true that there was one part of Mr. Glenn's address which will well bear repeating. He said:

"I am not a professional man, having gone through the ranks, from the bottom to my present position. I tell you gentlemen that you'll have to learn to mix better with your labor; to meet the hand worker on a better basis; to see his problems in his light; and to be able to call him 'Bill' occasionally, and not 'Mr. So-and-So.'

"The only way we're going to produce for the future, and for the present, is by either getting down to business with labor or by kidding labor. The first is the better way."

The meeting then adjourned, after deciding to convene next time in Albany, N. Y.

The Dinner

The previous evening witnessed a dinner tendered the State Association by the New York Society of Architects at the Hotel Astor, and the spirit of that dinner was well typified in President Gordon's opening address.

Captain John P. Leo, chairman of the New York City Board of Appeals, representing Mayor Hylan, welcomed the out of town guests to the city, referring to "our profession" as the "oldest upon the face of the earth."

Following Captain Leo, President Ornan H. Waltz, of the New York State Association of Architects, spoke briefly in appreciation of the courtesies extended by the Society. Then Mr. Robert D. Kohn, ex-president of the New York Chapter of the American Institute of Architects, spoke of the Institute, appealing to those present for better feeling and unity.

Following Mr. Kohn, there were speeches by:

Mr. D. Everett Waid, treasurer of the American Institute of Architects.

Mr. Alexander MacIntosh, ex-president of the Brooklyn Chapter of A. I. A.

Mr. Leon Stern, or Rochester, president of Central New York Chapter A. I. A.

Mr. Edward B. Green, of Buffalo, State Board of Examiners and Registration of Architects, was introduced, but Mr. Frederick L. Ackerman spoke for Mr. Green, explaining that Mr. Green was to catch a train and could not be present.

Mr. Albert E. Kleinert, Superintendent of Buildings of the Borough of Brooklyn.

Mr. Addison F. Lansing, of Watertown, was called upon to address the meeting.

Mr. Edward W. Loth, vice-president of the New York Society of Architects, of Troy.

Mr. Waid, in behalf of New York State Association of Architects, proposed a vote of thanks to the New York Society of Architects, which was unanimously carried.

The Building Situation in Chicago

A Review of the Calder Senatorial Inquiry by a Special Correspondent of The American Architect

CONCURRENT with the conference held by the New York State Association of Architects, it is interesting to note the expression of opinions of those who have appeared before the Calder Senatorial Inquiry in Chicago, as furnishing an accurate basis of comparison as to conditions on the Atlantic Seaboard and the Middle West.

Chicago's building problem shares the complexities of the building situation in other cities and has a few intricacies not found elsewhere, including a labor situation that has proven very troublesome in the past.

There are hopes, however, that by spring at the very latest there may be a decided renewal of building activity along all lines, with all the opposing elements willing to make sufficient concession as to price and pride to overcome the lethargy which has assailed the building industry in the past and which has given Chicago the onus of a very critical shortage in homes.

The Calder committee inquiry has brought out, most of all, the heavy increase in building costs over the last four years, an increase that has served to paralyze building as far as any important structures are at present concerned. Just what is to blame for the highly increased cost is a matter of varied opinion. One of the causes very frankly suggested by Henry G. Zander of Koester & Zander, important real estate operators, has to do with the elimination of competition in building materials. Mr. Zander alleged that there is very little important competition in the materials that go into building, asserting that the "Chicago list," for example prevails in practically every retail lumber yard in Chicago. This so-called "Chicago list," Mr. Zander said, has prevented any general decline in lumber retail values. His assertion, disputed rather lustily by Edward Hines, one of the leading lumber dealers in Chicago, was bolstered by the statement that building pieces which sold in 1913-1914 at $30, sold in 1919 at $70 and in spite of the so-called drop in lumber values are now selling at $54. Mr. Zander also asserted that lesser materials were also largely immune from the economic force of open competition. He pointed out sand as a typical example. This material, he said sold for 90 cents to $1.20 in 1910 and is now selling at from $4.00 to $5.60.

Adolph Kramer, president of the Chicago Real Estate Board, who has been active of late in efforts to bring peace in the warring elements in the building situation suggested another cause for the increased cost of building, which he said has reached the highly aggravated point in this city. This cause, he asserted, was the fact that Chicago builders are not permitted to use materials of certain kinds which are manufactured outside of Chicago. Curtailed production in Chicago and lack of outside competition have served to heighten prices in all such materials. Mr. Kramer estimated that rentals on apartment structures in Chicago, erected under present building costs, would have to approximate $25 per room per month in order to net the owner anything approaching a commensurate return on the invested capital. As a remedy for the situation, Mr. Kramer suggested the removal of tax exemption from all securities or the placing of building mortgages on the federal exemption list.

This idea advanced by Mr. Kramer has been given added impetus by the proposal introduced in the city council by Alderman Joseph O. Kostner to exempt from local taxation for a period of five years all improvements on real estate which may be erected during the period from January 1, 1921, to December 31, 1922. This measure, Mr. Kostner declares, will cause a building boom over the next two years that will do away with the present shortage of homes and apartments. Such a plan, he asserted in proposing the idea, has turned a building slump into a building boom in certain Ohio cities.

"Some such inducement is necessary," says Alderman Kostner, " if the people of Chicago are to have homes."

Benjamin B. Rosenthal, director of the Chicago Housing Association, estimated, for the benefit of the reconstruction committee that there is a shortage of 50,000 homes in Chicago. His solution of the problem is government aid in providing homes.

Charles O. Bostrom, Chicago city building commissioner, attributed the building slump to high interest rates on the part of bankers and mortgage brokers and unreasonable profits—ranging, as he said, as high as 100 per cent.—on the part of manufacturers of building materials.

His statistics as to the rate of building are of interest. In 1916, the last normal year of building activity in Chicago, 4,293 permits for apartments were issued. During 1918, 1919 and the first ten months of 1920, only 856 apartment permits have

been issued. Of this number, only 82 were issued in 1920, about one-fiftieth of the normal requirements for Chicago.

Frank I. Bennett, state commissioner of public works said that Illinois, as a whole, is two and a half years behind on its building program. He prescribed as a remedy for the situation, a fuller agreement between labor and the building interests, a full day's work for a full day's pay and greater moderation on the part of materials manufacturers.

The hearing was by no means entirely a matter of condemning the materials interests.

Edward Hines said that within the last seven months, building sizes of lumber have declined from 13.43 per cent. to 36.37 per cent. In spite of this, lumber sales in the Chicago district have dropped to one-third the normal rate, the slump beginning about March 1. Mr. Hines said that there is no shortage of lumber in Chicago and that the different varieties of lumber and the various competing lumber associations make it impossible for any single set of men to build up a monopoly in lumber and raise prices at will, even if the lumber interests were disposed to do such a thing.

Mr. Hines made the interesting assertion that the man who wanted to save money for himself would be rather foolish to build at this time, when by waiting six months or a year, he would be able to build at from 25 per cent. to 50 per cent. less than at present. Many mills are now selling at less than cost to get rid of their stocks, Mr. Hines assured the committee.

Just what the outcome of the Calder committee hearings will be is a matter of the future, but there is a very definite feeling among all concerned here that the building interests will get together in a way that will permit a resumption of activity on a large scale in the spring. Labor, for example, is much more productive and less defiant than even three months ago and the growing number of the unemployed in this section will have a continuing tendency to minimize labor demands.

As far as that goes, Chicago building labor has agreed to hold its demands in check. This agreement arrived at last week is a tacit pledge on the part of the building trades labor not to ask for increases in wages before May, 1922, and to refrain from strikes over jurisdictional issues in the interim. This question of striking over matters of jurisdiction has been a thorn in the side of building contractors who have been compelled to halt building activities of an important nature while factions within the labor organization fought out their petty differences. This question being subordinated and the wage issue being temporarily stabilized, contractors feel much greater assurance about going on with their plans for the future.

As far as prices are concerned, the past week has not reflected any serious change. Lumber values are still weak, though fairly stable and no immediate slump or advance is anticipated. The election did not prove a stimulus to business as had been expected by some. Retail prices are as follows for the principal lumber needs:

Yellow pine:—B. & B. 1 in., $95 to $130; 13-16, 3¼ flat flooring, $85 to $90; 2 by 4, 10 to 16 feet, No. 1 long leaf, $51; 2 x 6, $41 to $49; 2 x 8, $46 to $50; 2 by 10, $50 to $52; 2 by 12, $51 and $54.

Northern Hardwoods, carload lots, Chicago:

Birch, four ¼ No. 1 and 2, $155; select, $130 to $138; No. 1 common, $95 to $100; No. 2 common, $60 to $65; No. 3, $35 to $40.

Hard Maple, four ¼ No. 1-2, $135 to $140; select, $115 to $120; No. 1 common, $95 to $100; No. 2, $60 to $65; No. 3, $32 to $50.

Red gum four ¼ No. 1 and 2, $148 to $152; No. 1 common, $88 to $92; No. 2 $43 to $47.

Birch, four ¼ No. 1 and 2, $155 to $160; select $130 to $139; No. 1 common, $95 to $100; No. 2, $60 to $65; No. 3, $35 to $40.

Douglas fir, 12 by 12, No. 1 up to 32 feet, $65 to $75; 14 by 14, $68 to $75; 16 by 16, $70 to $75; 18 by 18, $75 to $80.

Building materials continue firm, with price advance not entirely unexpected by those in a position to know. Some of the principal retail quotations are:

Cement:—Universal, $4 to $4.20; Lehigh, $4.20 to $4.40; Portland, $4.20 to $4.40.

Bulk lime, $1.70 to $1.90; face brick, octagons, $68 to $75; fire brick, $32 to $40; 12 in. .24 to .27, 18 in. .46 to .54.

Crushed stone gravel $3.40 to $4.25; lake and bank sand-torpedo, $3.40 to $4.25.

A decline from the present price of high grade ready mixed paints is anticipated within the next fortnight. Some decline in lead is expected before the first of the year. Other values in the paint and varnish trade would seem to be holding firm.

Illinois Architects File a Brief With the Calder Committee

HENRY K. HOLSMAN, president of the Illinois Chapter, and Mr. F. E. Davidson, president of the Illinois Society of Architects, upon receipt of a formal invitation to appear before the Calder Senate Committee on Reconstruction, invited a number of the leading architects of Chicago to join in a conference to outline a brief to be presented to the Committee as a contribution of facts and a record of the opinions held by the Illinois architects. The brief was filed with the Senate Committee on

November 11 by Mr. Henry K. Holsman. It was as follows:

Twenty of the leading architects of Chicago were invited to meet and give their opinions and suggestions for submission to your honorable body. Thirteen architects met, and after discussing the matter in two sessions, the following catagorical statements respecting the existing hindrances to building and their corresponding remedies were agreed upon by the undersigned. The chief hindrances are:

1. Popular belief in the existence of monopolistic fixing of the price and the output of labor and the fear of jurisdictional and other strikes and lockouts with an attendant system of graft and frightfulness.

2. A popular belief in the existence of artificial regulation of price and output in the production and distribution of building materials with and without the connivance of organized labor, together with inadequate and manipulated transportation facilities.

3. High cost of money for building enterprises with exceedingly high commission charges for building loans.

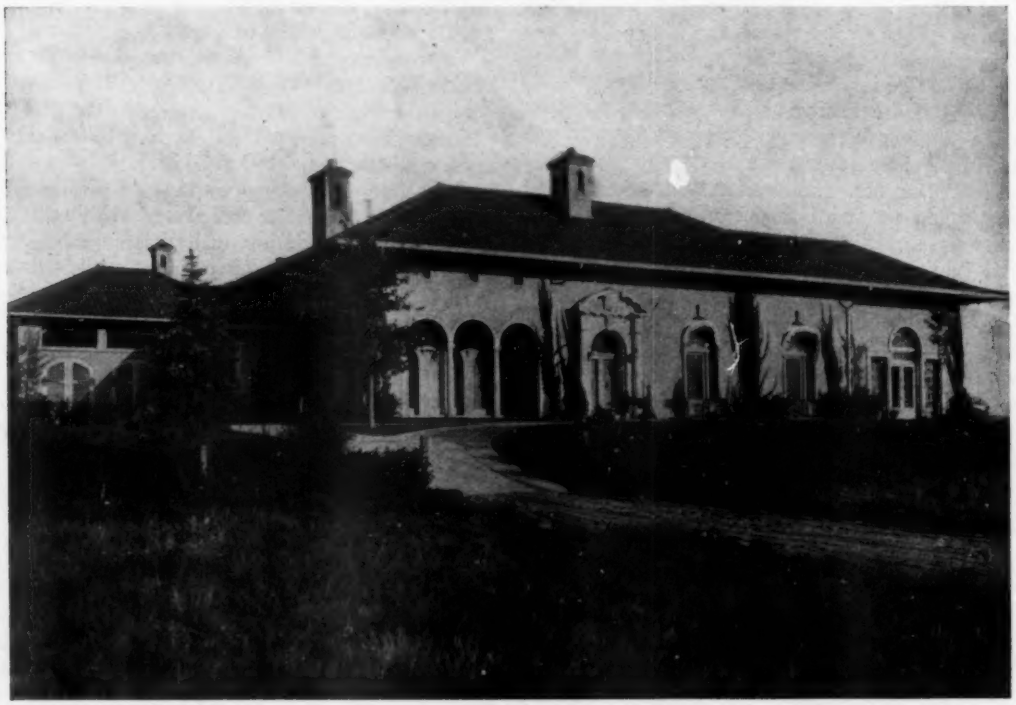
The suggested remedies are respectively:

1. The prohibition of the use of force or coercion in strikes and lockouts for the settlement of jurisdictional or wage disputes and the restoration of the right of every citizen to enter as an apprentice or tradesman any field of endeavor he chooses without let or hindrance from any organization except the government itself.

2. The creation of a permanent bureau or department of buildings at Washington leading to the democratization of building material associations and the prohibition of artificial fixing of prices and output and the protection of the rights of any individuals to enter production fields without let or hindrance from any association.

3. The enactment of a law making the postal savings and other savings deposits of the people available for individual home building and ownership at rates commensurate with savings deposit interest in conjunction with a national building bureau or department, operating in a manner similar to the farm loan banks system and furnishing low cost plans and desirable information relative to individual or single family home building.

We further beg to state that there is now such a volume of projects on file in the architects' offices in Chicago being held up by the prevailing unsatisfactory building conditions that if released could not probably be built within the next two years with the available supply of organized labor and building material; and further, we believe that even if money were available on easy terms the cost of building could not be materially reduced within the next few years and might be increased on account of the actually limited supply of building materials and labor.



HOUSE OF GEORGE E. CRANMER, DENVER, COLORADO

J. B. BENEDICT, *ARCHITECT*

Dynamic Symmetry and the Greek Vase

A Communication from Professor William H. Goodyear of the Department of Fine Arts, Brooklyn Museum

EDITOR'S NOTE—In THE AMERICAN ARCHITECT, issue of November 12, 1919, an article by Jay Hambidge on Symmetry and Proportion in Greek Art was printed. Since that date, Mr. Hambidge's book on Dynamic Symmetry and the Greek Vase has been published. Professor William H. Goodyear, who has contributed many articles to THE AMERICAN ARCHITECT in his research as to Architectural Refinements, has addressed the following communication to the Editor of this journal. Mr. Goodyear's views as to Mr. Hambidge's book, and as to the merit of his theory will undoubtedly be read with interest and stimulate, it is to be hoped, a more careful consideration of certain theories of design on the part of architects.

THE review in *The Nation* of a book by Mr. Jay Hambidge on Dynamic Symmetry—the Greek Vase, indicates that no important discovery is in question, but that "the familiar device . . . of creating a new vocabulary" has been employed "quite subconsciously" to cover with an air of mystery ideas with which the world of art has long been more or less familiar.

It must be immediately conceded that no reviewer is authorized to go outside the matter of the book under review in making his comments upon it, but if you will allow me to mention some facts regarding the career of Mr. Hambidge and his theory, which do not appear in the book, I shall find it a convenient way of showing that a really important discovery is in question and that this fact may be verified by the book alone. This method of procedure is suggested by the consideration that it will relieve me from debating matter, of geometry and mathematics which might be very tedious to your readers and which I am really incompetent to handle.

Let me mention first that the observations and theories of Mr. Hambidge did not begin with Greek vases. They were originally and still are, in their most important phases, architectural. They were brought to the attention of Mr. Francis Cranmer Penrose, in London, by Mr. Hambidge, personally, in 1902, and were considered by Penrose of such importance in their relations to Greek temple architecture that Mr. Hambidge was at that time invited to appear before the Society for the Promotion of Hellenic Studies, and the matter of his address was considered of such importance as to procure him an invitation, then and there, to a later appearance before the Society after his studies should have been more thoroughly developed. At this time Mr. Hambidge had applied his theory of "Dynamic Symmetry" to the design of the Ionic volute and this was of special interest to Mr. Penrose, who had at that time announced a theory of his own on this subject. During the discussion which followed Mr. Hambidge's paper Mr. Penrose took advantage of the occasion to assure the members of the Society that he was acquainted with the method of Mr. Hambidge's procedure, declared that it was scientific, hoped that the matter would not be allowed to languish, and gave the method unqualified endorsement (see R. I. B. A. Journal, March 20, 1920, p. 213).

The next appearance of Mr. Hambidge before the Hellenic Society was planned for the year 1914, but this appearance was postponed on account of the war and has only recently occurred.* Following his second appearance before the Hellenic Society Mr. Hambidge was also invited to address the Royal Institute of British Architects and it was on the date of March 20, 1920, that the account of this address appeared in the R. I. B. A. Journal. By reference to this report one may learn, what is a familiar fact to many of Mr. Hambidge's friends in New York City and many architects of New York City and also to the authorities on related subjects of Harvard and Yale Universities, that Mr. Hambidge's theory of Greek design is by no means confined to Greek vases, but relates first and foremost both to Egyptian and to Greek temple architecture, and, secondly, to all phases of Greek design, of which the forms of Greek vases are certainly an important, but still only a single feature. Stated in simple language, Mr. Hambidge's theory is, that, as distinct from the proportions and ratios of linear measurement, Egyptian and Greek design were based on the relations and inter-relations and proportion of areas as determined by the procedure and methods of geometry. That this is essentially the matter of his theory may, for the minute, be attested by the remark made after the conclusion of this address before the R. I. B. A. by some of its members. Sir Cecil H. Smith, Director of the Art Division, Victoria and Albert Museum (for many years Keeper of Greek Antiquities in the British Museum), in proposing a vote of thanks said: "Judging from the evidence he had gathered from Mr. Hambidge's work and also from the results of his own researches at the British Museum, it seemed to him that Mr. Hambidge, by his theory of the *commensurability of areas, had hit upon an extraordinarily interesting truth* . . . Mr. Hambidge's theory deserved the fullest consideration by the

*This is the paper that was published in THE AMERICAN ARCHITECT of November 12, 1919.

(*Continued on page 673*)

The Old Daniel Lake House, Staten Island, New York

(See reproduction of drawing by O. R. Eggers on opposite page)

WHEN in the early part of the Seventeenth Century, the Dutch settled on Manhattan Island, they soon began the preparation for the colonization of the valley of the Hudson River. It is in this district which also includes Staten Island in New York Harbor, that there are to be found many examples of gambrel roofed houses, the present illustration being typical.

The heavy walls of these houses were constructed of stone and were usually pointed up with white mortar. The roofs were low and of moderate pitch for about ten feet both ways from the ridge. From this point the angle was sharper to near the eaves, where it curved gracefully outward, extending from four to six feet. This broad expanse of roof surface made the upper stories of the house uncomfortably hot in summer and equally uncomfortable during the rigorous winters. To overcome these undesirable conditions, hay was often placed between the rafters, which no doubt acted in a measure as a non-conductor. It is interesting to note the gradual development of the overhanging roof in the architecture of modern suburban houses, where porches are planned beneath it.

The gambrel roof as a rule is the dominating feature in correctly assigning the Dutch Colonial. In tracing the origin of the name, gambrel, we have for authority Oliver Wendell Holmes, who in his "The Autocrat of the Breakfast Table," writes:

"Know old Cambridge, Hope you do,
"Born there? Don't say so? I was, too.
"Born in a house with a gambrel roof—
"Standing still, if you must have proof.
"Gambrel? Gambrel? Let me beg
"You'll look at a horse's hinder leg.
"First great angle above the hoof—
"That's the gambrel, hence gambrel-roof."

THE OLD DANIEL LAKE HOUSE, STATEN ISLAND, N. Y.
THE AMERICAN ARCHITECT Series of Early American Architecture

XUM

EDITORIAL

What Is the Matter with the Building Industry

TWO features of timely interest presented in this issue are the conference held in this city under the auspices of the New York State Society of Architects and a very complete report of the inquiry at Chicago conducted by Senator Calder's Senate Commission.

It is extremely gratifying to be able to present these discussions on a topic that is now of first importance to every architect in the country and this gratification is further enhanced by the fact that there is clear indication that the profession of architecture is realizing its responsibility and is actively taking part in these momentous matters.

That the initiative is being taken by state societies is added proof of the desirability of similar organizations in every state.

The fundamental thing most strongly urged in the conference held by the New York State Association is the necessity for better co-operation in all the various and complex elements that combine to make the building industry. The debate was fairly representative of these various elements and it was therefore to be foreseen that there would be many diverse points of view as it was equally obvious there would be a very wide variance of opinion on each of them.

Mr. Louis Comstock, for example, believed that we should more closely apply the present workings of the English guild as furnishing the best basis for a closer and more satisfactory co-operation. Mr. Burt L. Fenner, with the conviction born of a very close co-operation with building activities during the war, believed that while there are a great many reasons for present conditions in the building industry the principal ones are finance and transportation. Stating that the whole system under which we conducted, and with fair success, building operations in this country for a long period have broken down under the strain of things as they have been since the armistice, the remedy urged by Mr. Fenner that priority in the shipment of material and pressure on the banks to force loans on building operations would largely overcome present conditions, will not, we believe, be very largely accepted.

MR. ORDWAY TEAL strongly urged the adoption in this country of England's guild system. Such a method, it was very clearly brought out in the debate, would mean that we would need to reorganize our entire economic system and cast aside all the results of our present highly developed efficiency in the meagre hope of eventually finding a better way. Such a thing is entirely too experimental and therefore too dangerous for serious consideration at this time.

Probably a more practical discussion of the present building situation is the one that has resulted from the Calder Senate Inquiry held in Chicago. The complexities of the question, "What Is the Matter with the Building Industry?" are so many and the opinions with reference to it are so diverse that it will take some time to digest them. Meanwhile there seems to be a very pronounced sentiment that one of the most strongly deterrent factors is the scarcity of mortgage money and the high rate of interest asked for that which is available. Labor, apparently, is much more productive and less defiant today than it was six months ago. Transportation is steadily improving, and the prospect is that the prices for building materials will early become fairly stabilized. This leaves the remaining and principal factor the high cost of money. In all of the debates that have been presented this condition has been referred to and the opinion seems to be generally held that with mortgage money more easily available the building situation would become rapidly cleared of many of the impediments that now obstruct its progress.

In Chicago, as in New York, there is a plea for better co-operation among all the elements of the building trades throughout the country. The willingness, even on the part of labor, to work in that direction is so marked that it is optimistically felt that we are nearing the beginning of the end of our building troubles.

LIBRARY
THE DETROIT
NOV 27 1920

The Lockwood Building Committee Investigation in New York

THE atmosphere surrounding the investigation now being conducted in New York City into corruption in the building trades is surcharged with all sorts of threats of disclosures that in their importance will dwarf even the very unsavory conditions that have thus far been revealed. Attempt has been made to quash indictments on the plea that the life of the committee ended with the life of the State Legislature, and that any action of the present committee was therefore illegal. This attempt has been successfully combatted by Samuel Untermyer, counsel for the commission, who plans to dig deeper than ever into the activities of the grafters in New York City and with specific reference to the city's building contracts.

Without regard to what may be further divulged, sufficient has been brought to light to show that much of the retardance of building in New York City was not altogether due to the high cost of anything more than the high cost of graft. And as these conditions have worked in certain directions almost an entire suspension of building and therefore have interfered with the business of architects, it should be the duty of architects, both as individuals and through their representative bodies to co-operate in every way possible with the Lockwood Commission and its able counsel in bringing to light every scrap of evidence that will tend to convict the grafter and as far as possible abate continuation of conditions that are unbearable.

It is encouraging to note the attitude of the contractors and their ready co-operation in securing the widest publicity in these matters.

At a meeting of the Executive Board of the Associated General Contractors of America, at Washington on November 16, resolutions were adopted unanimously endorsing the action of the Lockwood Committee, and plans were laid for securing the co-operation of the United States Chamber of Commerce and other employers' associations in urging the Lockwood Committee to pursue its investigation without fear or favor to the end that all guilty be exposed and punished, and that justice thereby be done to those who, condemning the purchase of immunity from labor troubles by the corruption of labor officials, desire an honorable settlement of the labor problem based upon fair dealing.

Illinois Architects' Valuable Co-operation with Calder Committee

BOTH by reason of professional training and experience, no group forming part of the building industry in this country is better equipped to advise in matters pertaining to building conditions as they exist today than are architects.

It has always been urged in these columns that it was an insistent civic duty for the profession actively to co-operate in these matters, and it has been many times deplored that there was not displayed a quicker readiness so to act.

It is therefore extremely gratifying to note the present pronounced activity and to make reference to the fact that Senator Calder during his address following the luncheon tendered his Senatorial Committee by the Chicago Engineers' Club on November 11, paid special tribute to Henry K. Holsman, President of the Illinois Chapter, American Institute of Architects. Stating in substance that the suggestions presented to the committee by Mr. Holsman on behalf of the architects of Illinois were the first suggestions of a similar nature that thus far had been presented to the Senate Committee, Senator Calder added, that in his opinion there had been advanced a plan that would, if adopted by Congress, result in permanently removing the obstacles now preventing the construction of housing and impeding the building industry. He further stated that the recommendation of the architects would doubtless be concurred in by the Committee in its report to Congress.

The suggestions to which Senator Calder refers were drawn jointly by the Illinois Chapter and the State Society, and filed with the Senatorial Committee in the nature of a brief, the substance of which may be read on page 668 of this issue.

Dynamic Symmetry

(*Continued from page 669*)

artists of this country." "Sir Richard Paget, in seconding the vote of thanks, said that . . . the ideas which Mr. Hambidge had put forth were certainly most instructive and *opened the door to an entirely new set of ideas. The notion of measuring areas instead of lengths and breadths was fundamental and interesting.* He was sure it would have a most useful effect on all who were interested in proportion and design; they would see in it not only a basis of good design, but also of good craftsmanship, on which, ultimately, good design rests." The report of the R. I. B. A. Journal shows that Mr. Hambidge's paper was devoted specially to the Parthenon, but that it also included Greek bronzes and pottery. Remarks (not quoted here) by Sir Cecil Smith, who is an eminent authority on Greek vases, show that he considered Mr. Hambidge's theory to represent a wholly original discovery as regards the vases.

Now these facts bear on the notice of *The Nation's* reviewer in the following way, and I am preparing to explain that the theory of Mr. Hambidge represents a discovery if the theory be true, and I am not debating whether the theory is true. It so happens that Greek vases are fairly numerous in the United States, in the Museums of Boston and New York; it so happens that at quite a recent date of his observations and theories Mr. Hambidge was led to take up the subject of the Greek vases; it so happens that these vases were held by him and by the experts of the Boston and Metropolitan Museums in this department, namely, Dr. Caskey and Miss Richter, to be important and remarkable corroborations of his theory; it so happens that Mr. Hambidge was led to publish a book on this particular portion of his theory and that he very properly confined his discussions and his theory in this book to the Greek vases.

Consequently, *The Nation's* reviewer is not at all open to criticism for not knowing that the theory covers a much wider ground than that of Greek vases. But I will now proceed to debate his suggestion that no discovery is in question as regards the matter of the book, by calling attention to the fact that two leading experts on Greek vases in the United States have believed that a discovery has been made, and so much so that Dr. Caskey is, himself, writing a book on the subject of the vases. I will also remark that if a discovery is in question as regards Greek architecture, the same theory must be a discovery when applied to the vases. Now as regards the fact that the theory is a discovery as regards Greek architecture, if it be true, there can be no debate. It is attested by the interest of Mr. Penrose and the Hellenic Society; it is attested by the reception of the theory at the time of the recent address before the Royal Institute of British Architects. Some of the gentlemen there present subsequently contested the theory, but not one denied that the theory represented a discovery if the theory were true.

My own acquaintance with the subject of Greek architecture and with the various efforts which have been made to establish a theory of ratios in the linear measurements and linear planning of Greek temples is sufficient to make me aware that Mr. Hambidge's theory represents a discovery, if it be true. A considerable number of architects and experts in New York City will support me in this opinion. Under these circumstances I venture to believe that Mr. David Eugene Smith's remarkable control of the history of geometry and mathematics has misled him to under-rate the importance of Mr. Hambidge's book. This book itself, however, shows a very considerable and intimate knowledge of the history of geometry and mathematics. In fact, the whole basis of the theory of Mr. Hambidge is that the Greek knowledge of geometry and of the proportions of areas was applied to the design of buildings and other forms of art. That the Greeks had this knowledge of geometry is known to us by history, as *The Nation's* reviewer recites and it is an essential fact in the theory of Mr. Hambidge. On the other hand, the theory that Greek design was controlled by this knowledge and that it was based on the proportions of areas and not on the proportions of lines, is, in my opinion, and according to my knowledge, undoubtedly a new one. The simple fact is of crucial importance that Mr. Hambidge has explained by his theory why all the linear measurements of the Greek temples, both in plan and in elevation, are incommensurate. This peculiarity has baffled every student, up to date, who has endeavored to determine the ratios of Greek planning by comparing the linear measurements. The fact that no scholar, up to date, has suggested any method of comparing or studying Greek temple plans except by the comparison of linear measurements is indisputable.

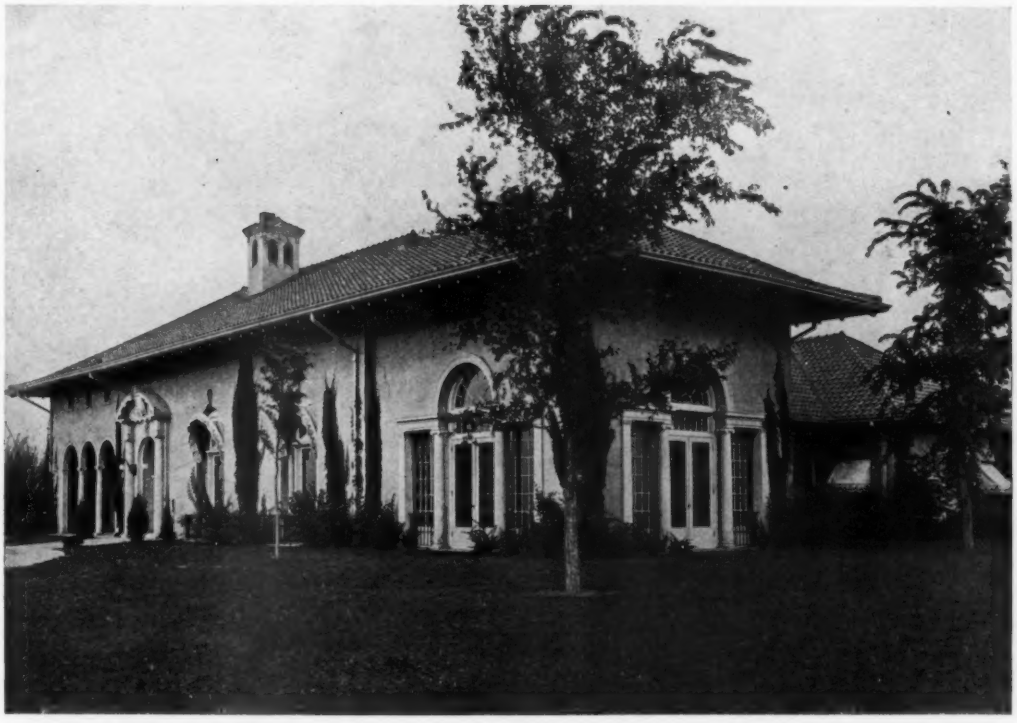
In 1919, Mr. Hambidge was awarded the Sachs Research Fellowship, with a very considerable income, by Harvard University, as an encouragement and support of his research. Yale University, with the same end in view, has provided the means, from a special endowment, for the publication of the book under discussion, and in the spring of this year provided funds to enable Mr. Hambidge to visit Athens and continue his research on the site of the Parthenon. Yale not only engaged Mr. Hambidge to deliver the Trowbridge lecture course last season, but

has also engaged him to appear in the same course on his return from Greece.

According to a statement made by Mr. Hambidge in his address before the Architectural League of New York about two years ago, there was in 1912 only one scholar in the United States who had favorably considered his theory. Apparently there was only one scholar who even knew of its existence. When we consider the recognitions which have recently been accorded him by Yale and Harvard, this success in the course of only seven years is without parallel in the annals of American archaeology. For Mr. Hambidge was not educated at either of these Universities and a few years ago neither of them knew of his existence. He had made his living and achieved his first distinction as an illustrator in black and white. The most remarkable feature of his success is the fact that a considerable and constantly increasing number of artists in design are applying his theories to their own modern work and are enthusiastic supporters of his ideas, without any reference to their importance as regards archaeology and the history of art.

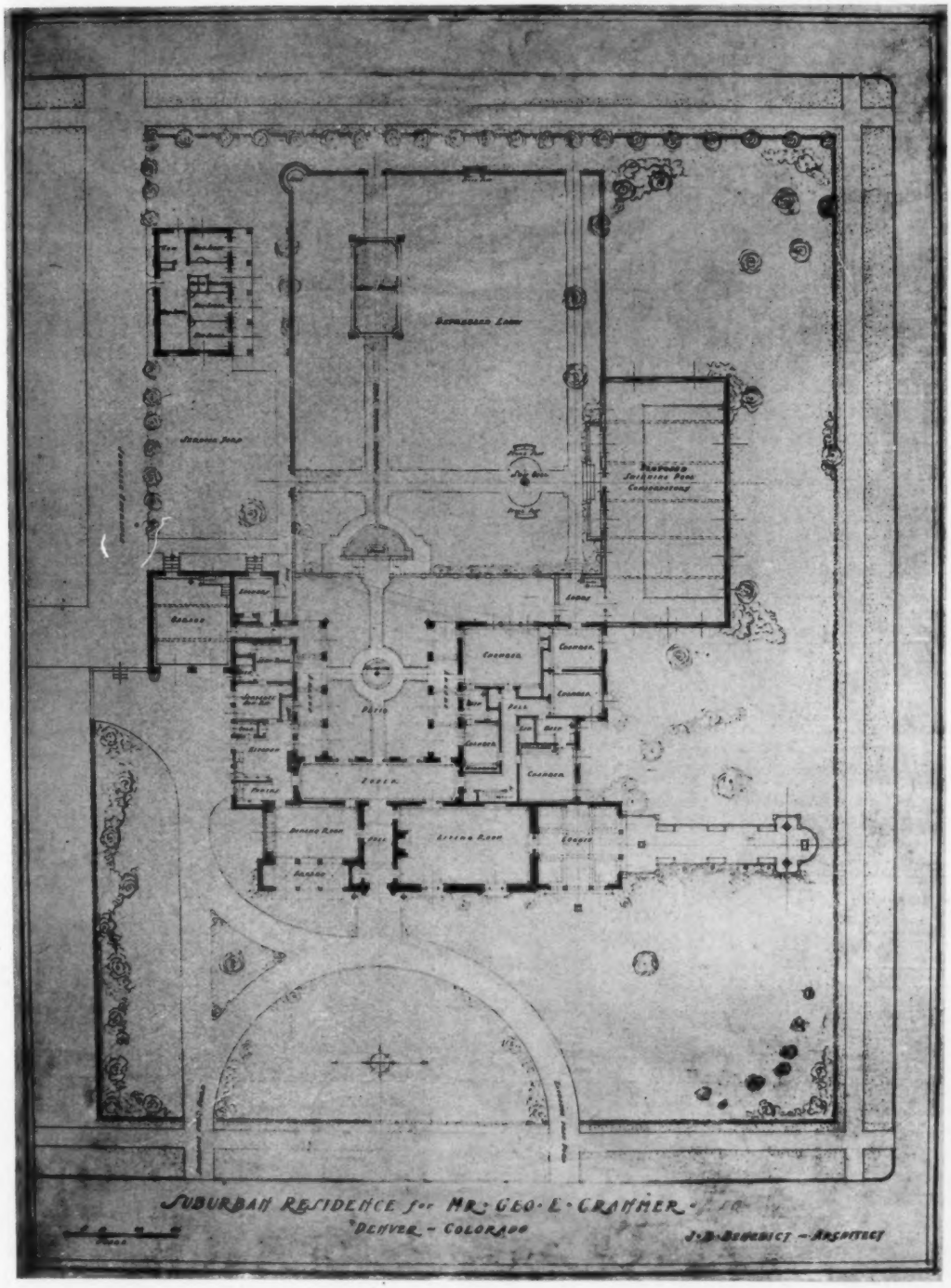
DETAIL OF HOUSE OF GEORGE E. CRANMER, DENVER, COLORADO
J. B. BENEDICT, *ARCHITECT*

HOUSE OF GEORGE E. CRANMER, DENVER, COLORADO
J. B. BENEDICT, *ARCHITECT*



HOUSE OF GEORGE E. CRANMER, DENVER, COLORADO
J. B. BENEDICT, *ARCHITECT*

XUM



PLOT PLAN

HOUSE OF GEORGE E. CRANMER, DENVER, COLORADO

J. B. BENEDICT, *ARCHITECT*

XUM

DETAIL OF DOORWAY

HOUSE OF GEORGE E. CRANMER, DENVER, COLORADO

J. B. BENEDICT, *ARCHITECT*

Lava stone on background of salmon colored stucco—black iron and silver gray oak doors

ENTRANCE PORCH

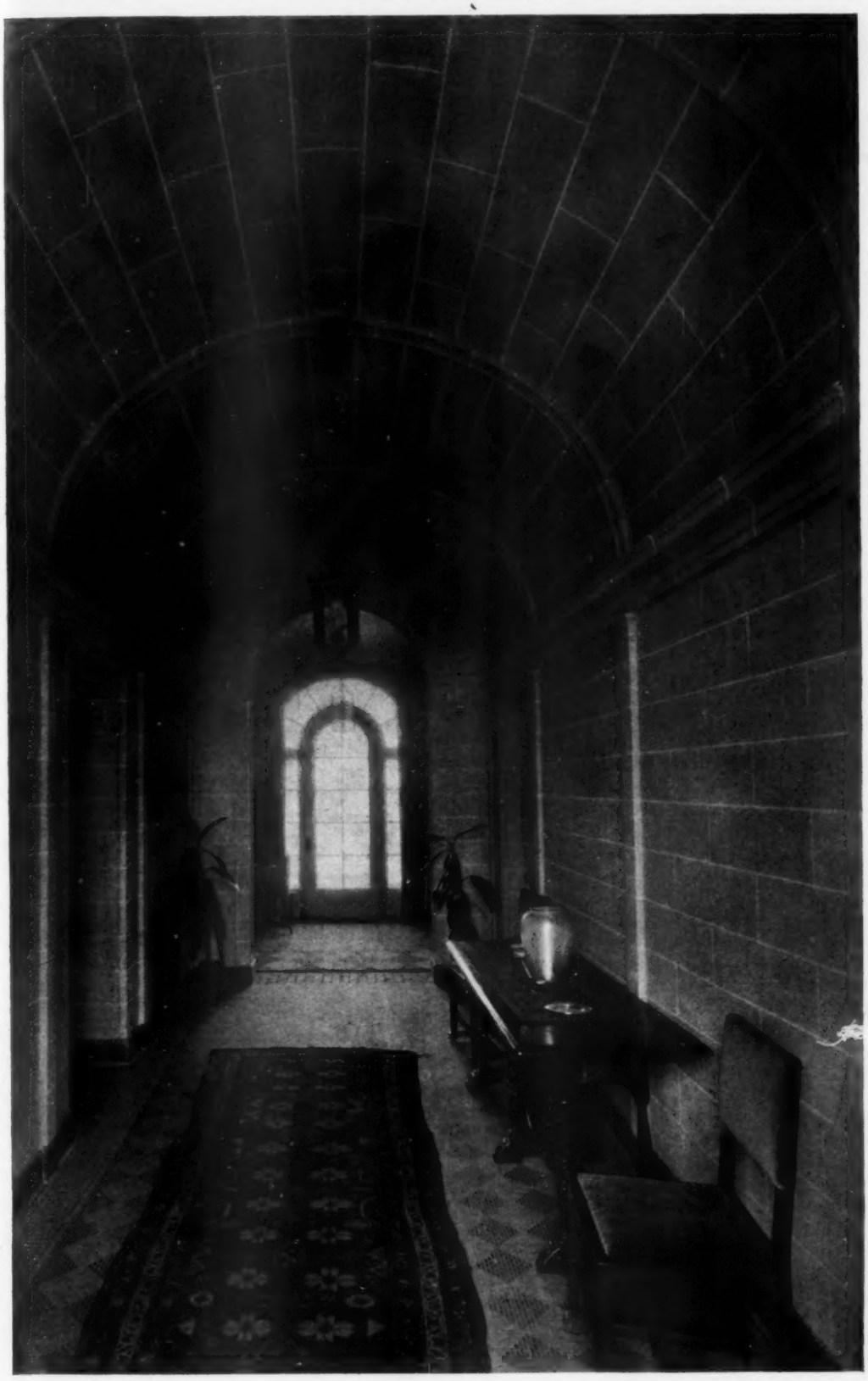
HOUSE OF GEORGE E. CRANMER, DENVER, COLORADO

J. B. BENEDICT, *ARCHITECT*

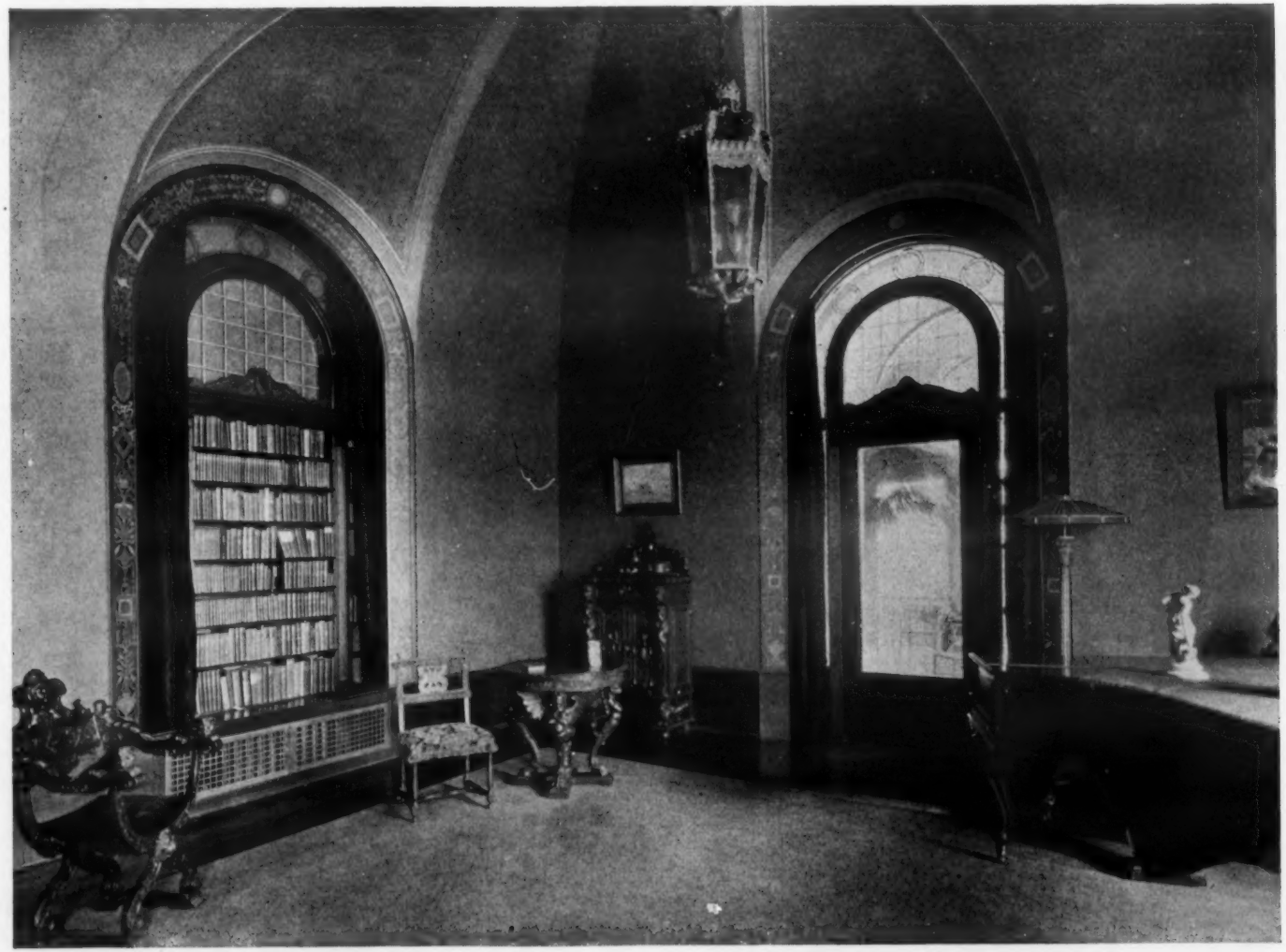
Columns and arches are of Del Norte lava stone—fawn color—stucco walls and vaulting of salmon colored stucco, brick floor in varigated colors—basket weave pattern

XUM

XUM



THE HALL
HOUSE OF GEORGE E. CRANMER, DENVER, COLORADO
J. B. BENEDICT, *ARCHITECT*



LIVING ROOM

HOUSE OF GEORGE E. CRANMER, DENVER, COLORADO

J. B. BENEDICT, *ARCHITECT*

Walls of umbered-gilt, Gesso ornament around openings, curtains of iridescent gold and black, square pocket build in back of circular beaded openings for adjustment of curtains which may be completely concealed if desired. On left wall bookcase simulates window openings

DINING ROOM
Finished in cement plaster, stippled between ceiling beams

HOUSE OF GEORGE E. CRANMER, DENVER, COLORADO
J. B. BENEDICT, *ARCHITECT*

The east hall gives on the patio. It serves the double purpose of circulation and sun room. The openings are fitted with sash which may be opened to the full size of the masonry openings. The door in the background leads to the bedroom wing. The near end of the hall is used as a breakfast room

XUM

XUM

A Modern Textile Mill

By Ernest Fallows.

THE Bay State Cotton Corporation's new 35,000 spindle combed yarn mill and storehouse, recently completed at Lowell, Mass., furnishes an excellent example of present day industrial construction.

The mill building is 394 feet long by 142 feet wide, three stories in height with a four-story tower and ample basement. The storehouse is 137 feet long by 72 feet wide, seven stories high. Both buildings are flat slab, reinforced concrete construction. Large as they are, these buildings are only the first part of a developing plan, and arranged to allow eventually, without disturbance, for a 200 per cent. addition.

THE LOWELL TEXTILE MILL AND STOREHOUSE IN COURSE OF CONSTRUCTION

Baled cotton is delivered direct from the car to the storehouse. The storage space has been carefully adjusted as to area, floor heights, windows, etc. Bales are stored on end, one bale high, with enough surplus space to give light and ventilation and room for handling of cotton. By this method of storing cotton, an accurate inventory of the various grades and marks of cotton can be readily taken.

The cotton is conveyed from the storehouse across a connecting bridge to the picker room of the spinning mill, which occupies the fourth tower floor of the building. In this mill, contrary to the usual custom in laying out picker rooms for cotton mills, the pickers are located on the top story and there is no dust chamber. The dust from the pickers is taken care of by an exhaust system, which blows it to a specially constructed bin located in the cotton storehouse.

Finished laps are taken from the delivery end of the finisher picker and automatically conveyed in a lap carrier on belt, spiral and gravity conveyors to receiving stations at the card alleys on the floor below. The empty lap carriers are automatically returned to the picker room.

The cotton, after going through the cards located on one side of the room, passes through the combing processes, drawing and slubbers, to the other side. After the slubbing processes, the roving in boxes is just dropped through a hole in the floor, where, by the use of spiral, gravity and belt conveyors, it is carried to a receiving station on the floor below at the intermediate frames and the empty boxes are automatically returned.

Conveyors are also employed to carry roving from the fine frames to spinning and from spinning to spoolers. This arrangement reduces to a minimum the carrying distance of material and allows for an arrangement of machinery with aisles running across the mill so that the light from the window shines down the working alley.

XUM

TEXTILE MILL AND STOREHOUSE FOR THE BAY STATE COTTON CORPORATION, LOWELL, MASS.
LOCKWOOD, GREENE & COMPANY, *ARCHITECTS AND ENGINEERS*

The windows are 25 feet wide by 13 feet high and admit an abundance of light, which, assisted by the flat slab type of construction, not only reduces the cost of artificial lighting and eye strain, but multiplies good cheer, making people happy in their work.

The columns are spaced 28 feet apart, which allows for an efficient machinery layout with good working alleys and operating floor space.

The building may be extended and additional equipment added without disturbing the present machinery layout.

Heat and humidity are supplied from a central station and are all governed by automatic control to the exact requirement. There is an entire change of air containing the right amount of heat and moisture in each room at least every six minutes, and this is accomplished without draft.

Each floor is provided with clean, well-lighted and sufficient toilet facilities fitted with the best of modern fixtures. There are also locker rooms separate from the toilet room, with individual lockers for each of the employees.

The welfare of the employees has been carefully considered from every angle. There is a certain amount of satisfaction and contentment that comes to the employees unawares in the knowledge that they are housed in an attractive, substantial, concrete building, safe against fire, free from constant vibration which unpleasantly affects the nervous system, and with artificial illumination that is second only to daylight.

THE SPINNING ROOM—LOWELL TEXTILE MILL

Attention is directed to the very excellent natural illumination, which will foster maximum production.

The buildings themselves are splendid pieces of architectural design, and something that the employees as well as the owners cannot fail to be proud of. Mechanically perfect as present day skill and ingenuity can make it, generously endowed with the things that count for human contentment in its work, the production from the new plant cannot fail of establishing a new, high record in the industry. This is a phase of industrial development receiving ever increasing consideration on the part of manufacturers.

This plant was designed by Lockwood, Greene & Co., architects and engineers. It was built by the Aberthau Construction Company.

LOCKWOOD, GREENE & COMPANY, ARCHITECTS AND ENGINEERS

XUM

The Artificial Illumination of Motion Picture Theatres

Present Abuses and Suggested Improvements

Part II

IN the preceding article Mr. Bragdon set forth the present abuses which exist in the artificial illumination of the motion picture theatre, as well as indicating the steps necessary to remove them. He clearly affirmed the necessity of co-operation on the part of the architect. In an effort to determine what intensities of illumination and brightness were desirable in the motion picture theatre, a series of experiments were carried out at the Eastman laboratories at Rochester, N. Y., the results of which were presented in a paper entitled "An Improved Method for the Illumination of Motion Picture Theatres," by L. A. Jones, read before the recent convention of the Illuminating Engineering Society at Cleveland, Ohio. In this excellent paper, here presented in part, Mr. Jones briefly reviews conditions as relating to the artificial illumination of the motoin picture theatre, and suggests methods, which, if adopted, would vastly improve conditions. He states:

"In the early days of the motion picture industry it was customary to present pictures in a room containing practically no illumination other than that resulting from the light reflected from the screen. This procedure may have been justified to a certain extent at the time because screen illuminations were very low, making it necessary to exclude practically all light from the room in order that the resultant picture might appear to be of satisfactory brightness. With the progress in development of projection apparatus, the screen brightness has been raised continually, until at the present time such values are relatively high. Improvements in the quality of the photographic materials have resulted in better positives for projection which also tends to give pictures of greater clearness and brilliancy. Along with this tendency to increase the screen brightness, modifications of the interior illumination of motion picture theatres have taken place. The trend has been in the direction of increased room illumination, and with the appearance of the higher class theatres, devoted exclusively to the exhibition of motion pictures, has come considerable development in the art of interior illumination of such places. The existence of higher screen brightness naturally permits of greater illumination without serious interference with the quality and brightness of the projected pictures.

"The desirability of providing sufficient illumination for the convenience and comfort of the audience, if this can be accomplished without perceptible loss of quality in the projected picture, is obvious. It is scarcely necessary to enumerate the many serious objections to the use of very dimly lighted rooms in which motion pictures are being exhibited to large audiences. The difficulty encountered by persons entering from the relatively brightly lighted exterior regions in finding their way to unoccupied seats is considerable.

"It is evident that for the satisfactory exhibition of motion pictures the general illumination in the theatre must be subdued in order that the projected picture shall be of good quality as regards its apparent brightness and contrast, and that in raising the value of the general room illumination there is a limit beyond which it is impossible to go without seriously affecting these characteristics of the picture.

"While a great deal has been done in improving the character of the illumination of such theatres, the problem seems to have been approached largely from the purely practical standpoint with the object of producing *artistic effects, and for the enhancement of the ornamental detail* of the interior rather than with the idea of producing maximum visual comfort for the audience while at the same time maintaining satisfactory photographic quality in the projected picture. It, therefore, seemed worth while to approach this problem from the standpoint of the retinal sensibilities, and to link up the conclusions drawn from such a consideration of the subject with those resulting from practical tests.

"In order to make an actual determination of the maximum general illumination permissible, an experimental lighting system was installed in the projection room in the research laboratory. In designing this system an attempt was made to obtain the maximum average illumination on the table plane (horizontal surface 30 in. above the floor) with a minimum of illumination on the projection screen, and further to distribute the light so that no area either of wall, ceiling or lighting fixture should be sufficiently bright to cause glare or appreciable increase in the adaptation level of the observer.

"In Fig. 1 is shown a side elevation of the room in which the experiments were conducted, with the locations of the various elements of interest in this prob-

lem and the dimensions of importance. In Fig. 2 is given a plan view showing the position of the stations on the table plane at which measurements of illumination were made. The ceiling of this room is painted white, while the walls are a medium tone of buff.

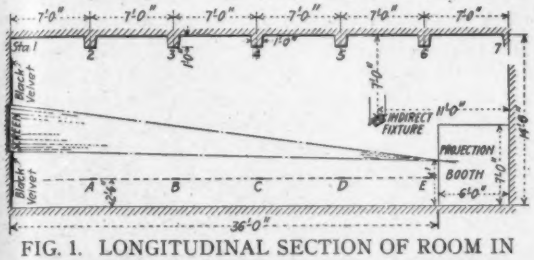


FIG. 1. LONGITUDINAL SECTION OF ROOM IN WHICH EXPERIMENTS WERE CONDUCTED

The projection screen is of the metallic type (Gaumont), having a high reflecting power for points on and near the axis, but falling off rapidly for angles greater than 15° from the axis.

"The lighting fixture used was constructed by mounting six 10 x 12 darkroom ceiling lamps on a light wooden frame work. In order that the position of this fixture could be adjusted to give various distributions of the light, it was suspended as shown in Fig. 3.

"The vertical members *AA* carry the horizontal member *B*, which is a cylindrical metal rod about 21 feet long. One of these fixtures is mounted near each side of the room and parallel to each other.

"Upon these horizontal ways operate the sliding carriages *C*. Over small pulleys attached to this carriage the sash cords *FF* operate and suspend the light-fixture as shown. By means of these adjustments it is possible to adjust the position of the lighting fixtures to any desired distance from the ceiling, to vary its distance from the projection

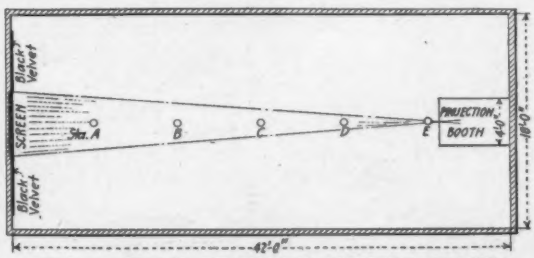


FIG. 2. PLAN OF EXPERIMENTAL ROOM

screen by a considerable amount and further to vary the inclination at which the fixture hangs, thus controlling to a great extent the distribution of the light from the fixture.

"Complete diffusion of the light from the incandescent lamps mounted in the fixture was obtained by inserting a sheet of 10 x 12 in. opal glass in the position provided for holding the safelight. In the projection booth is situated a projection machine of the ordinary type. An arc current of 25 amperes was used throughout the tests. With this current the screen brightness as measured with the machine running, but without a picture in position was found to be approximately 20 foot-candles. This measurement was made from a point very near to the axis of projection, and, due to the character of the screen, was much higher than the brightness measurement made from points a few degrees from the axis. From measurements made previously in several of the motion picture theatres in Rochester, an average value of screen brightness under similar conditions was found to be approximately 15 foot-candles. The screen brightness used in these experiments therefore is somewhat higher than is ordinarily met with in practice.

"The lighting fixtures having been installed, the procedure followed was to determine by trial and error the maximum amount of light which it was possible to use without causing an appreciable loss of quality in the picture."

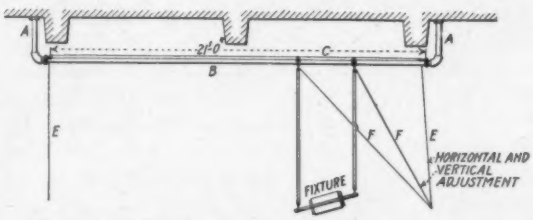


FIG. 3. METHOD OF SUSPENDING ADJUSTABLE LIGHTING FIXTURE USED IN TESTS

(The detailed account of the tests is here omitted, the conclusions following.—Ed.).

"The conclusions to be drawn from these experiments are that a relatively large amount of general illumination may exist in motion picture theatres without appreciably affecting the quality of the projected picture, provided that the illumination is properly distributed.

"In Fig. 4 is shown a possible arrangement of the lighting system which would give a highly satisfactory theatre illumination. This plan is presented as illustrative of one way of handling the problem, and undoubtedly many others may be worked out.

"The ceiling, which consists of four arches or concavely curved surfaces, is illuminated by lamps inclosed in the fixtures as indicated, the intensity of the various lights being arranged roughly as indicated by the numbers i = 1x; i = 4x, etc. This would result in a relatively high ceiling brightness at the rear of the theatre and a relatively low value at the front. Since the lamps themselves must be placed compara-

tively close to the ceiling, it would be necessary in order to obtain an approximately uniformly graded ceiling brightness to arrange the decorative scheme applied to the ceiling so that the region marked *B* would have a relatively low reflecting power, while those marked *A*, on the other hand, would have a very high reflecting power. While the details of such decorative system have not been worked out, it is undoubtedly possible to achieve. The lighting of

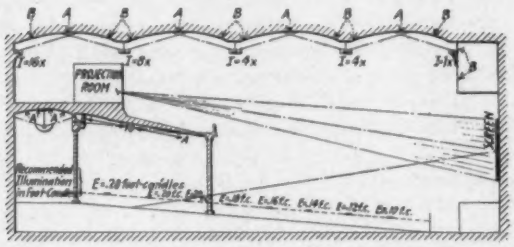


FIG. 4. LONGITUDINAL SECTION OF TYPICAL MOVING PICTURE THEATRE

Here is shown one method of providing correct illumination. The relative values of the light sources are shown. It will be noted that these increase considerably from screen to lobby. The proper light intensities on plane 30 inches above the floor are also given.

the ceiling underneath the gallery is obtained from lamps at *B*, and here again the ceiling reflecting power should vary from a low value at *B* to a high value at *A*.

"The desirability of close co-operation between the lighting engineer and the designer of the decorative scheme to be applied to the interior of the field should be emphasized. The proper adjustment of the reflecting power of various wall and ceiling elements is a powerful factor in the control of the brightness of such surfaces, and considerable judgment and skill in the adjustment of the decorative scheme to the lighting system may be necessary in order to prevent certain surfaces very close to light sources from having excessive brightness.

"From the results of the experiments in the projection room, it has been concluded that the illumination on the table plane at various points in the theatre should be approximately as indicated by the values of *E*, and the number and size of the light units used should be so adjusted as to give the indicated values. While an approximate computation could be made indicating the number and size of units necessary, it would be quite impossible without detailed information of the dimensions of the room, the reflecting power of various surfaces, and the exact position of the lamps to make a definite estimate as to the total quantity of light flux necessary.

"In Fig. 5 are shown three cross sectional diagrams illustrating the possibilities in beam design which would result in a satisfactory distribution of the light flux over the ceiling. These designs, of course, are only given as suggestions of what might be done in arranging an indirect system of illumination in order to conform with the conditions previously outlined. The beam structure adopted in any particular case will be influenced to a great extent by the architectural style of the theatre, and the diagrams given serve only to suggest a method of concealing the lamp within the beam structure and at the same time obtain the proper illumination of the ceiling.

"It should be mentioned also that the illumination in the lobby and in the various vestibules and extreme rear of the theatre should be so arranged that a person entering the theatre passes gradually from the illumination of the exterior to that of the body of the theatre. That is, the transition from exterior brightness level to the interior brightness level should be made in a series of gradual steps rathr than in a single abrupt step.

"The general conclusions are, therefore, as follows:

"It is quite possible to use a system of lighting in a motion picture theatre which will result in illumination levels on the table plane much higher than those at present prevailing. The illumination may in fact be raised to such an extent that ordinary newspaper print can be read with ease by an observer adapted to the existing brightness levels. The presence of this increased illumination does not cause any appreciable degradation of quality in the projected picture. The accomplishment of such satisfactory results depends upon the proper distribution of the light.

"While it is impossible to outline specific instructions for particular cases without detailed knowledge of such factors as dimensions and architectural details of the room, the reflecting power of the various

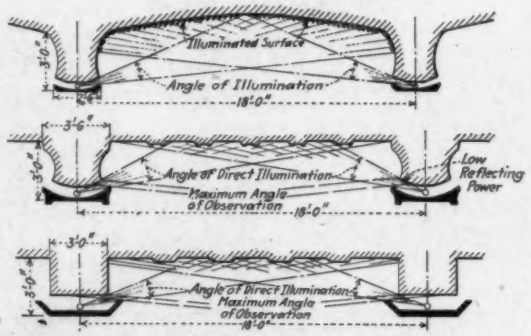


FIG. 5. THREE CROSS SECTIONS ILLUSTRATING SUGGESTED METHODS OF TPEATRE ILLUMINATION

ceiling and wall surfaces, and the position of the light fixtures, the following general principles may be outlined, it being understood that the numbered values are approximate and that some variation may be allowable, depending upon the particular case.

(1) The illumination on the table plane should vary from 0.10 foot-candles at the front of the theatre to 0.20 foot-candles at the rear.

(2) No area (outside of the projected picture) visible from any seat in the theatre should have a brightness of more than 2.5 to 3.0 millilamberts.

(3) The attainment of (1) without exceeding the values mentioned in (2) requires the use of very extended effective sources such as illuminated ceiling and walls, and is best accomplished by the use of an indirect system of lighting.

(4) All light sources and fixtures, such as diffusing globes and translucent glassware having a surface brightness of more than 2.5 to 3.0 apparent foot candles should be entirely concealed from view.

(5) It should be noted that a sheet of white paper illuminated by a 25-watt lamp at a distance of 12 in. has an approximate brightness of 20 apparent foot-candles. A sheet of music, therefore, illuminated in this way, if visible, becomes a glare spot and may cause great discomfort to the audience. Arrangements should therefore be made which, while providing adequate illumination for the musicians in the orchestra, will prevent the illuminated music sheets from being visible to the audience.

(6) Considerable attention should be paid to the character and position of exit signs. While it is necessary to make such signs very conspicuous, this can be accomplished without making them so brilliant as to become disagreeable glare spots in the field of the observers' vision.

(7) The contrast between the highest light of the picture and the surrounding frame should be less than 1 to 1000, preferably less than 1 to 500. Black frames should therefore be avoided, one of neutral gray being much preferable.

(8) Lighting of lobby, vestibules, etc., should be so arranged that the transition from the brightness level of the exterior to that of the interior or vice versa is accomplished by a series of small differences rather than by a single large one. Such arrangement will to a great extent eliminate the visual shock which accompanies a sudden change in the intensity of the visual stimulus.

(9) The use of a projection screen set well back on the stage and thus shielded to a great extent from the light reflected from ceiling and walls would probably permit the use of even greater room illumination than was used in these experiments.

"In conclusion the author wishes to acknowledge his indebtedness to Dr. C. E. K. Mees for helpful suggestions throughout the course of this work, and to Mr. Milton Fillius, who ably assisted in the conduct of the investigation."

It would seem that the information obtained as a result of these tests is of a most valuable character. The figures giving the lighting intensities which will produce the maximum of eye comfort to the audience, as well as allowing adequate contrast between the screen and its surroundings, can be at once put to practical use. The gradation of the illumination from entrance to screen seems an essential feature, and will, of course, require fixtures of varying output. By masking all sources of light, thus eliminating glare, a much softer effect is produced. It is to be hoped that a very general improvement in the artificial illumination of the motion picture theatre will soon become apparent, and the architect should use every effort to bring this about.

A Building Code for Pennsylvania

A commission designated as the State Building Code Commission has spent several years in earnest study and faithful work in attempting to formulate a building code for Pennsylvania. For various reasons it was not adopted by the legislature. That there is need for more adequate building regulations in Pennsylvania becomes more apparent each day. As a step toward securing such a code, a meeting has been called of a committee named by Clifford B. Connelley, Commissioner Industrial Board, to be held in Harrisburg, November 18, to talk over the entire situation.

The bill as presented had incorporated within it a provision, to the effect, that separate codes for the several classes of buildings be worked out as standards of the Industrial Board of the Department of Labor and Industry—a provision which, perhaps, could be developed at this particular time. The committee will probably discuss the advisability of the Industrial Board drafting a code, using as a basis the data already gathered, with the aid of a representative committee of persons interested in the building construction industry.

The building code committee consists of James C. Cronin, chairman, member of the Industrial Board, Keystone Building, Harrisburg, Pa.; Fred J. Hartman, secretary of the committee, secretary of the Industrial Board, Keystone Building, Harrisburg, Pa.; D. Knickerbacker Boyd, F. A. I. A., architectural advisor and structural standardist, Structural Service Bureau, Esty Building, 1700 Walnut St., Philadelphia, Pa.; Edwin Clark, Chief of the Bureau of Building Inspection, City of Philadelphia, Philadelphia, Pa.; S. A. Dies, superintendent, Bureau of Building Inspection, City of Pittsburgh, Pittsburgh, Pa.; Prof. C. G. Dunnells, Carnegie Institute of Technology, Pittsburgh, Pa.; C. T. Ingham, representing Pennsylvania Chamber of Commerce, Vandergrift Building, Pittsburgh, Pa.;

John Molitor, chief, Bureau of Housing, Department of Health, Harrisburg, Pa.; Bernard F. O'Rourke, Inspector of Buildings, Wilkes-Barre, Pa.; Edgar A. Weimer, consulting engineer, Lebanon, Pa.; E. F. Welsh, Pennsylvania Building Trades, Pittsburgh, Pa.; and G. H. Danforth, representing Pittsburgh Building Code Commission, 529 North Euclid Ave., Pittsburgh, Pa.

THERMAL CONDUCTIVITIES OF VARIOUS INSULATING AND BUILDING MATERIALS

All the figures given below, with the exception of the first two, are the results of measurements made at the Bureau of Standards, Washington, D. C., on representative samples of materials. They represent actual internal conductivities, surface effects having been eliminated. The mean temperature of the determination was about 25° C., and the temperature differences used varied from 10 to 25° C.

Material	Description	Conductivity K	Conductivity k	Density D	Density d
Vacuum	Silvered vacuum jacket—Residual air pressure about 0.001 mm Hg.	.000002	0.1	...	...
Air	Ideal air space—If radiation or convection could be prevented	.000060	4.2	.0012	0.08
Calorox	Fluffy finely divided mineral matter	.000076	5.3	.064	4.0
Kapox	Imported vegetable fibre—loosely packed	.000082	5.7	.014	0.88
Pure wool		.000084	5.9	.11	6.9
Pure wool		.000084	5.9	.10	6.3
Hair felt		.000085	5.9	.27	17.
Pure wool		.000090	6.3	.08	5.0
Keystone hair	Hair felt confined with building paper—flexible	.000093	6.5	.30	19.
Mineral wool	Medium packed	.000095	6.6	.20	12.5
Corkboard	No artificial binder—low density	.000096	6.7	.11	6.9
Mineral wool	Felted in blocks	.000099	6.9	.29	18.
Cotton wool	Loosely packed	.000100	7.0	...	...
Pure wool		.000101	7.0	.04	2.5
Insulite	Pressed wood pulp—rigid	.000102	7.1	.19	11.9
Linofelt	Vegetable fibre confined with paper—flexible and soft	.000103	7.2	.18	11.3
Ground cork		.000102	7.1	.15	9.4
Corkboard	No artificial binder—high density	.000106	7.4	18.	11.3
Celite	Infusorial earth powder	.000106	7.4	.17	10.6
Granulated cork	About 3/16"	.000107	7.5	.13	8.1
Cabots Quilt	Eel grass enclosed in burlap	.000110	7.7	.25	16.
Flaxlinum	Felted vegetable fibres—firm and flexible	.000113	7.9	.18	11.3
Bibrofelt	Felted vegetable fibres—firm and flexible	.000113	7.9	.18	11.3
Rock cork	Mineral wool and binder—rigid	.000119	8.3	.33	21.
Balsa wood	Very light and soft—across grain	.00012	8.4	.12	7.5
Wool felt	Flexible paper stock	.000125	8.7	.33	21.
Lith board	Mineral wool, vegetable fibres and binder—rigid	.000131	9.1	.20	12.5
Planer shavings	Various	.00014	10.	.14	8.8
Pulp board	Stiff pasted board	.00015	11.	...	...
Air cell ½"	Corrugated asbestos paper enclosing air spaces	.00015	11.	.14	8.8
Air cell 1"	Corrugated asbestos paper enclosing air spaces	.00017	12.	.14	8.8
Asbestos paper	Asbestos and organic binder	.00017	12.	.50	31.
Infusorial earth	Natural blocks	.00020	14.	.69	43.
Fire felt sheet	Soft, flexible asbestos sheet	.00021	14.	.42	26.
Fire felt roll	Asbestos sheet coated with cement—rigid	.00022	15.	.68	43.
Cypress	Across grain	.00023	16.	.46	29.
Fullers earth	Argillaceous powder	.00024	17.	.53	33.
Asphalt roofing		.00024	17.	.88	55.
White pine	Across grain	.00027	19.	.50	32.
Asbestos mill board	Pressed asbestos—not very flexible	.00029	20.	.97	61.
Mahogany	Across grain	.00031	22.	.55	34.
Insulex	Asbestos and plaster blocks—porous	.00031	22.	.47	29.
Virginia pine	Across grain	.00033	23.	.55	34.
Oak	Across grain	.00035	24.	.61	38.
Hard maple	Across grain	.00038	27.	.71	44.
Paraffine	"Parowax," melting point 52° C.	.00055	38.	.89	56.
Gypsum plaster		.00078	54.	...	...
Asbestos wood	Asbestos and cement—very hard and rigid	.00093	65.	1.97	123.

K = Thermal conductivity in Calories per sec. per sq. cm. per deg. C. per cm. thickness.
k = Thermal conductivity in BTU per day per sq. ft. per deg. F. per inch thickness.
D = Density in grams per cu. cm.
d = Density in lbs. per cu. ft.
69700 K = k. 62.5 D = d.

The American Architect, Nov. 24, 1920

XUM

Current News

Happenings and Comments in the Field of Architecture and the Allied Arts

Further Details on the Chicago Architectural Exhibit

The Own Your Home Exhibition to be held in the Coliseum, Chicago, March 26 to April 2 is to be an immense affair sponsored by the Architectural League and the Federated Arts Club of New York, the Illinois Chapter of the American Institute of Architects, the Illinois Society of Architects, and the Landscape Architects of America. The exhibits will be taken by special train to New York for a second showing at the close of the exhibit here.

Model houses to be built at low cost, will be erected in the Coliseum. In and around these will be every device for comfort and economy. Every article from the latest model electric dishwasher to steam heated chicken houses will be shown in operation.

Not only will the exhibition show how to build houses, but how to get the money to build.

"The architects' committee will pass on all exhibits," said Henry K. Holsman, president of the Illinois Chapter, American Institute of Architects. "Our idea will be to make every exhibit tend to create a feeling that the visitors should own their homes.

"The architectural committee is conducting a national competition for houses of four, five and six rooms. There are four sets of prizes totaling $15,000 for designs in lumber, brick, concrete and stucco.

"At least thirty of the designs will be published in a book to be sold at cost at the exposition and elsewhere. The leading architects of America are competing. A condition of acceptance of a prize for design is that the architect will consent to the sale of a complete set of working drawings and specifications to builders at not to exceed $25.

"The book will give prospective builders facts on how to put up the most modern homes at the least expense.

"A special committee will be appointed to show interested visitors how to borrow building money at the lowest interest.

"The drawing of plans for small homes has been neglected because at the regular fee of 3 per cent., or 6 per cent., with personal supervision, such work does not pay a busy architect. Of course to draw plans for $25 and a prize and then have one's name on the plans so that one will have to answer questions, will be largely philanthropic. But the architects feel that they should lead the way in making Chicago a city of homes."

The entire exposition will be laid out by the landscape architects.

Robert H. Sexton is managing director of the exposition.

Chicago to Have Huge Post Office Terminal

A post office to cost six million dollars is now being constructed in conjunction with the new Union Station in Chicago. It will be located between Harrison and Van Buren streets, just west of the river.

Postal officials believe the construction of this building will in large measure solve the chaotic conditions of Chicago's mail service. The building will be designed by Graham, Anderson, Probst & White.

Warsaw Limits Every Family to Three Rooms

All rooms in private dwellings have been commandeered by the government to meet the housing situation in Warsaw, Poland. Only three rooms will be allowed for a family with children regardless of the wealth or social position of the tenant.

Warsaw has doubled in population since the war and further complications were caused by recent arrival of thousands of Bolshevist prisoners who have not been disposed of by the peace terms.

Food distribution was largely in the hands of the American relief administration this winter as in the past. Hoover food drafts which pour into the country with every mail are saving thousands from death by starvation.

Revival of Hand-Painted Furniture

One of the large furniture companies recently located in the Long Island City section is now making an effort to engage the services of artists to decorate furniture. In sending out the announcement that it is ready to give employment to artists the firm says that an entirely new line of goods is about to be placed on the market. The decorations are to be similar to those which were used on furniture nearly a century ago and which were used most effectively

XUM

by foreign makers. Some persons who are now past middle life will remember the furniture which was to be seen in homes of thirty and forty years ago, with carefully wrought pictures upon them. This furniture, for the most part, consisted of heirlooms and it has all practically disappeared from homes of the present day. The revival has come because many people are desiring to get away from the strict lines that have existed in furniture for a number of years. It is proposed in the new furniture that is now being planned to have artistic work of real merit displayed. The cost of the furniture will be commensurate with the skill put in its manufacture.

Church 125 Years Old

The Episcopal Church, St. Mark's-in-the-Bouwerie, at Second avenue and Tenth street, New York, which was recently illustrated in THE AMERICAN ARCHITECT by the sketches of Mr. Otto R. Eggers, has just celebrated the 125th anniversary of its existence.

A feature of the celebration was the unveiling of three statues. Two are in the portico and one is on the lawn. Those in the portico represent "Inspiration" and "Aspiration," and they are figures of two American Indians.

The statue on the lawn is called "The Little Lady of the Dew," and is of a nude woman. The sculptor was Gutzon Borglum. There is a niche, representing the spirit of baptism, with its running water, its arbor vitae, and the girl holding forth the waters.

An address was delivered by the Rev. Dr. William T. Manning, rector of Trinity Church, on the topic, "The relations of city to Church."

Business Men's Art Club for Boston

A Business Men's Art Club, on the lines laid down in Chicago, may be formed in Boston. The article published recently in the AMERICAN ARCHITECT, telling of the plans and the activities of the Chicago organization, attracted the attention of Boston business men who have taken up painting as a hobby or recreation, and it is now proposed to attempt to form an organization on similar lines in this city.

"It is desired to form a Business Men's Art Club in Boston," says a communication which has been sent to *The Transcript*. "The club is to be composed of business men who are studying or would like to study art as an avocation or hobby. The object being to encourage the study and practice of painting among the members and to co-operate with societies now aiming to broaden the appreciation of art in our city.

"It is desired to bring together men of middle age, men who desire to learn to paint, but who cannot or do not care to join day classes of young pupils, men who love nature and enjoy a recreation which challenges their best intellectual effort and would give them a means of self-expression.

"It is proposed to have classes one or two evenings a week, and on Saturday afternoons and other days, when convenient, outdoor sketching under the instruction of competent teachers."

Business men of Boston desiring to become members may communicate with Charles W. Cheney, Hotel Charlesgate, Boston.

Sweden Suffers from Money Shortage

Sweden is suffering from a scarcity of money and an abnormal economic situation. This is reflected in the report of the state bank for September.

The money shortage depresses the stock exchange, where prices of bonds and shares have touched a very low level, even the old fashioned industrial enterprises which pay dividends of 10 to 15 per cent. being quoted below par.

Causes to which Sweden's unsettled condition is attributed here include the socialist program, emanating from the present government, such as the investigation whether socialization of industry and commerce lies within the borders of possibility, heavy taxation, an increasing demand for higher wages, and the labor unrest.

Adding to this the growing debts to foreign countries through unnecessary imports, and decreased production ascribed by many to the eight-hour day, one obtains a picture of the present economic position of Sweden.

Rebuilding Ruined Areas

Throughout practically the whole of the devastated districts of France from 70 to 85 per cent. of factories and workshops employing over 20 men before the war have been rebuilt and are at work, it is stated in a cable to *The New York Times*. The latest figures, issued by the Ministry of Reconstruction, show enormous improvement even on those of the summer.

On October 1 the number of establishments again in working order was over 4,240, of which 75 per cent. have reached nearly the pre-war output. The department of Ardennes comes first in the list of those whose establishments have been put in order with 83 per cent. Meurthe et Moselle comes second with nearly the same percentage and the departments of the Nord, Pas de Calais, Marne and Vosges have all over 73 per cent. of their industries again at work. Forty-five thousand employes are back at work.

Naturally some industries have recovered quicker than others and at the head of the list is the chem-

XUM

ical industry with 54 per cent. former employes. The textile industry is employing 50 per cent. in spite of the bad season which has set in, while the metal and stone workers also number approximately 50 per cent. of those formerly engaged.

In the city of Lille, where there was not so great material damage as in other parts, 87 per cent. of factories have reopened and 64 per cent. of the former employes are again at work.

Black Beetle Destroys Forests

A little black beetle, half the size of a coffee bean, annually causes more losses to American timber than all the forest fires caused by man or nature.

Aristocrat of timber borers, called "Dendroctonus," he has been marked for extermination by the United States Forest Service, which is waging war upon him as relentlessly as upon the human firebug.

Annually he destroys almost 2 per cent. of the growing timber in the nation. More than 95 per cent. of the dead and dying trees encountered in a walk through the forests give mute testimony to his deadly operations.

"Dendroctonus" first bores in through the bark, prepares a neat little home for himself and family, and operations begin. Spreading out in all directions the family inceases until the entire tree is encircled. Off the rich life tissue between the tree proper and the bark they live, cuting off the sustaining sap. This job completed by death of the tree, the whole family, this time perhaps a thousand times more numerous than before, moves on.

As many as 100 trees have been found destroyed in one section. This represents an average value of $4,500 per section, from which it can be seen that this innocent looking litle insect has cost the people of the United States hundreds of millions of dollars.

But he's a marked bug! Every tree found with signs of the Dendroctonus is cut down and burned by the forest rangers. Traps, consisting of cut-down trees, are laid for him, and then destroyed.

Dust—An Industrial Criminal

It would be difficult to imagine anything more innocent in appearance than this waste product which, in one year, killed eighty persons and destroyed $7,000,000 worth of food and property in the United States, yet such, reports *The Nation's Business,* is the bill found by the United States Department against dust, just ordinary, commonplace dust that flies from wheels and cylinders and fans and settles all over the factory.

Grain dust, starch dust, sugar dust, leather dust and aluminum dust are all explosives, and the Department of Agriculture suspects a great many other kinds.

Grain dust is the worst enemy apparently; the damage it causes every year runs into millions. If that were the only evil result matters would not be so bad, but a more sinister item is that dust manages to kill many Americans every year.

An educational campaign is being waged by the Department of Agriculture to put an end to this industrial criminal.

Apartments for Babies

Babies are to be offered special inducements to become tenants of a row of buildings on the south side of Ninth street, from Fifth avenue to University place, which are being rebuilt by order of the trustees of Sailors' Snug Harbor.

The architects, Scott & Prescott, have been instructed to provide storerooms for perambulators near each entrance and to arrange gardens in the rear wherein baby may snatch a siesta under the shelter of a bush.

Novel Prison Bar Designed

A new type of bars designated for prisons are of hollow metal, filled with water. These pipes are all connected with a central pump, and the water is kept under high pressure. Thus, the slightest break in any bar would cause a powerful jet of water to spurt out. To continue filing the bar would be almost impossible. Also the fact that there was a leakage somewhere would be registered on a dial on the central pump, and lead to speedy investigation.

Decorations in the Business Office

Man adorns his office these days because he finds in harmonious surroundings a new power and quickened imagination, writes John Walker Harrington in *Arts & Decoration.*

Because he is in business he realizes that the man whose mind can reach out beyond four walls the greater will be his meed of success.

The idea that one might see visions of big business and develop plans and reach clear-cut decisions amid environments of beauty has come to many men by way of their homes. When they saw to it that their dwellings were appropriately decorated, they reserved at least one room where they might, on occasion, withdraw to think out their worldly affairs. Some of them had libraries, others studios, and many designated these retreats by the much abused title of den. They found that often such apartments served well for important conferences, but, above all, they answered the purpose of affording places of withdrawal from petty detail.

It came to pass, therefore, that our leaders in finance and industry said to the interior decorator: "You have done well with my home. Why can't

XUM

you do something like this for my private office?"

Why not, indeed? Hence the new movement which has resulted in making many an abode of business into a spot where dullness and banality cannot enter. Very often, owing to the lack of ground in the city, the occupant of the modern suites of offices looks out upon a narrow slit of a court or upon tier upon tier of windows piercing the steep walls of skyscrapers. If he has no view from his desk which suggests the world and the teeming city, at least he may have his working place so decorated that it will feed his fancy and quicken his mind.

The artist does his best in a studio surrounded by objects which, by color and form, give him unconscious suggestions of beauty; the author stays in his study, where, almost without his knowing it, some choice etching or a gilt title of a book may bring inspiration. The successful business man, too, although he may not be disposed always to admit it, is a seer, whose intellect is stimulated by the settings in which he is placed. The late J. Pierpont Morgan would have been fretted and harried in the presence of filing cabinets, clatering typewriting machines, and all the trappings of business efficiency. In the private office in his wonderful library he evolved great financial plans, a modern Lorenzo the Magnificent in his chamber of the palace.

A Worcester Architect

The career and works of Elias Carter, architect, of Worcester, form the topic of an interesting illustrated article by Mrs. Harriette M. Forbes in the October number of *Old-Time New England*. His designs included those for the Salisbury house, the Burt house, the Lincoln house, the Waldo house, the Dowley house and the Bullock house, all in Worcester, where he worked from 1828 to 1837. He also designed the John Wyles house in Brimfield, the Unitarian church in Kendon and the Charles Lee house in Barre.

New Tourist Accommodations for Bermuda

The project for the establishment of a new center for tourists in Bermuda having been approved, the Bermuda Development Company has begun work on what is considered the most important and pretentious undertaking the islands have ever known. A tract of 500 acres has been secured at Tuckerstown, near St. George's, for the site of the new resort. The buildings, which will include a fine hotel and a number of bungalows, are to follow the Bermuda style in exterior appearance; the interiors, however, are to be of the most modern and comfortable type.

Noiseless Chamber Constructed for Research Work at the Famous University of Utrecht

It is said that the physiological institute of the University of Utrecht possesses what is probably the most remarkable room in the world, a chamber about seven and one-half feet square, which is claimed to be absolutely noiseless, as far as the entrance of sound from outside is concerned.

It is on the top story of a laboratory building and is an inside room, but is so arranged that it can be ventilated and inundated with sunshine. The walls, floor and ceiling each consist of half a dozen layers of different substances, with air spaces and interstices filled with sound-deadening materials.

Some persons when in the room experience a peculiar sensation in the ears. While every effort has been made to exclude sounds that are not wanted, of course the object of constructing this singular room was to experiment with phenomena connected with sound. Some of the sounds employed are made in the room itself; others are introduced from outside by means of a copper tube, which is plugged with lead when not in use.

Stamps and Housing

A practical measure to aid a practical solution of the housing problem has been adopted by the British Government. Savings Certificates issued during the war became popular immediately, and from their beginning up to the armistice produced for war expenses, $1,015,881,075. Since the armistice and up to Sept. 1, $725,653,210 have been sold. These certificates are popular because they cost—roughly—$3.88 and become worth $5 in five years and $6.50 in ten. They are repayable at any time on short notice. The Ministry of Health has now arranged with the Government that half the money raised by the sale of the certificates in any one district should immediately become available for loans to the local authority for building houses in that district. Here is no charity, no paternal coddling by government, but an excellent chance for the people to pull themselves out of their own difficulties. Every man, woman and child can help in relieving the shortage of dwellings. If the people, really taking hold, can sell 2,000,000 certificates a week—no difficult job—$3,875,000 is available every week for building houses.

It seems to be quite a practicable form of thrift and of community team work, with a direct bearing on a public problem.

Ellis Island Asks for More Buildings

According to plans which were prepared for and submitted to Commissioner Frederick A. Wallis, the next Congress will be asked to provide for the construction of new buildings at Ellis Island which will enlarge the present housing space of the immigration station by about 5,000,000 cubic feet. The cost is estimated at about $5,000,000.

The entire plant on Ellis Island as it now stands cost the Government about $7,000,000.

The heads of the immigration service and the Department of Labor at Washington have been holding conferences with a view to reaching an understanding as to the requirements of house room on Ellis Island, since the worst period of congestion ever known in the history of the plant was at its peak some three weeks ago.

Capt. A. B. Fry, U. S. N., who is chief engineer of construction for public buildings in the New York district, drew up plans and made estimates.

The improvements will include a building, or "headhouse," at the ferry slip on Ellis Island, 300 x 100. In this new building there will be a reception room, a large waiting room, headquarters for the medical director, and the general information department may learn of the status of their newly arrived relatives or friends.

There will also be two new buildings on the front lawn for quarters for fumigation rooms and executive and record divisions.

Personals

The faculty of the division of the arts of the Carnegie Institute of Technology has been strengthened this year by the appointments of three eminent figures in the world of art. They are Henry Hornbostel, Edmund M. Ashe and Joseph Bailey Ellis. Mr. Hornbostel, a member of the firm of Palmer & Hornbostel, architects, of New York, has been made professor of architectural design. He has been associated with the school since its foundation as the designer of all of the buildings on its campus and, until the spring of this year, as patron of the division of the arts. Edmund M. Ashe was the author of the famous "Lend the Way They Fight" poster that was adopted as a trademark for the Fourth Liberty Loan. He will teach illustration. John Bailey Ellis, who is professor of applied art, was formerly director of the Sawyer's Island Art School at Booth Bay, Maine.

Durham Brothers announce the removal of their offices to 1611 Sansom street, Philadelphia.

Ellert & Lahr are moving their offices from 801 World-Herald Bldg. to 1602 City National Bank Bldg., Omaha, Neb.

News from Various Sources

Douglas Volk, of New York, is painting, in Washington, a portrait of General Pershing, for the national collection to be presented to the National Gallery by a committee of public-spirited persons headed by Henry White as chairman.

* * *

The National Academy of Design announces that there will be no Winter Academy this year. The galleries in New York, which were burned last winter, are being rebuilt, but will not be ready for occupancy until about the middle of January.

* * *

Joaquin Sorolla y Bastida has postponed his journey to this country on account of ill-health. His paintings, commissioned by the Hispanic Society, New York, are not yet completed.

* * *

In the United States the loss by fire each year is about $300,000,000—$3 for every man, woman and child in the republic.

In Europe it is about 32 cents.

* * *

Several modern suburbs are being built about Rome. Old forts are vanishing and giving way to homes the like of which have not been seen before in that part of Italy.

* * *

In Petrograd the fare for half an hour's ride in a taxicab is 2,000 roubles, which is the equivalent of nearly $1,000 in American money.

* * *

In order to encourage the building of beautiful residences in Paris, the authorities award three gold medals annually to the designers of the most artistic buildings.

* * *

A shortage of about 50,000 houses exists in Texas.

* * *

Schloss Fischborn, one of the most famous castles in Salzburg, Austria, has been destroyed by fire. It was a rebuilt fourteenth century building, belonging to Prince Johann Leichenstein, and contained a wealth of art and historic objects.

* * *

In Michigan, 30 firms in various sections of the state built 3,105 houses in 1919, costing $8,955,500, for workman's dwellings. In addition 28 other firms invested $1,500,000 in housing corporations and another firm has built a dormitory costing $85,000 for its women employees. The General Motors Corp. has spent $8,000,000 in Flint and Pontiac for industrial housing during the past year.

XUM

Weekly Review of the Construction Field

With Reports of Special Correspondents in Prominent Regional Centers

The general drop in prices, a recent review of credit and business conditions by the Federal Reserve Bank of New York points out, has:

proceeded with increased momentum and only a relatively small number of commodities has remained unaffected. Reports from various markets in all sections give unmistakable evidence that readjustment is in progress. Many of the basic raw products, such as hides, leather, rubber, cereals, sugar, cotton and potatoes have declined rather abruptly, and certain manufactured articles, notably textiles, automobiles and a number of other products have had substantial declines also. While quotations of iron and steel show no important changes there is an easier market, induced by such movements as the reaction in the automobile trade. The non-ferrous metals such as copper, lead and tin show substantial declines.

It is a curious and interesting fact that this drop in prices has not affected the ultimate consumer to any considerable degree. A significant example of that is shown in the clothing trade, in which thousands of persons have recently been thrown out of employment because of the shutting down of factories and mills in clothing centers in various sections of the country. This curtailment of production has been caused by the ultimate consumer himself, who has refused to buy at present prices, and who has, in reality, curtailed his buying to the point where further production by manufacturers has become little less than sheer waste. The situation, in a measure, is true of practically all industries. It is effectively illustrated in the business of department stores for October. In New York and vicinity, there was a decrease of more than 3 per cent. in sales. The increase of stocks on hand, as compared to the previous month, was about 17 per cent. for New York and vicinity and about 10 per cent. for the country at large.

THIS has had its effect on employment. There has been a reaction in that situation. Seeking the "man for the job" has now become a matter of seeking the "job for the man." In New York City the number of unemployed has been variously estimated at from 50,000 to 75,000, and it is definitely known that more than 35,000 clothing workers are at present out of work. In the country at large, the increase in unemployed over the figures of six and even three months ago is close to 15 per cent.

THIS condition has had its effect upon the financial life of the country. On November 10, the New York Stock Exchange suffered one of the worst low level days in its history. Speaking of the stocks offered on that date, the New York Times said:

Most of them closed around the lowest of the day, and this was equally true of the railway shares, which accompanied the industrials in their early recovery and subsequent fall to a still lower level. The grain and cotton markets moved in almost exactly the same way. Wheat in particular, after rising 4 cents per bushel over Monday's closing, fell with great violence more than 11 cents, reaching the lowest price since April of 1917, the month in which the United States declared war. Cotton relapsed with wheat; its price also reached the level of the spring of 1917, and the day's New York spot price both for cotton and print cloth was marked down accordingly. Meantime the call money rate went again to 10 per cent. and, despite the recovery in European exchange, the rates on Argentina and Brazil fell to the lowest point of the present movement.

The market as a whole undoubtedly gave evidence yesterday of continued liquidation; but it is difficult to escape.

Now, the architect is little concerned, perhaps, with the technical fall and rise of wheat or spot cotton or, perhaps, with any of the stocks or commodities mentioned above, but he is concerned with any situation which shows the general downward trend so clearly as does this situation.

It applies also to lumber. There, the market is reported to remain generally dull, and several mills are preparing to cease operations. As a result, prices should come down. Perhaps they will. But, it may be asked here again, what of the ultimate consumer, the man who is building a house and who will pay for the lumber which is to go into that house? He will profit nothing, if past indications of drops in prices and prices to the ultimate consumer are any indication. Housing is as badly off at present as it has been in the past. Perhaps it is worse off. This is due, not so much to the stringency of available materials or of transportation, as the lack of money with which to build. As Joseph P. Day, the New York real estate operator, said in our last issue, "the banks are to blame." They are holding to long term bonds or loaning on call rather than investing in mortgages, Mr. Day pointed out; and, material or no material, transportation or no transportation, building cannot proceed without money.

It is interesting to note, in this connection, an address by Mr. David M. Dunning, president of the Auburn Savings Bank, at the annual meeting of the New York Savings Bank Association. Mr. Dunning takes a rather unusual position for a banker in recommending the sale of a bank's long term bonds, even if at a loss on the purchase price of the bonds, and

of investing the money thus acquired in first mortgage investments, and he gives as the reason for such a move (for the small bank) the following:

1. "They are liquid in time of trouble without serious loss. We found this feature especially desirable during the troublesome period at the outbreak of the World War in 1914.
2. "The early maturity affords opportunity for a change of interest rate, thereby enabling a bank to keep step with economic conditions, quite different from bonds, especially long time bonds.
3. "The guaranty as to principal and interest.
4. "The attention given to the insurance and taxes.
5. "The collection of interest which is invariably paid when due, is a great relief to the working conditions of our institution.
6. "At maturity the principal is available for other investment if desired. We made use of this feature during the year 1918, when we desired to invest in Liberty Bonds."

This would seem to challenge the contention of many bankers that a bank must seek investment in those industries or markets where it can draw the highest rate of interest, particularly in a call money market or in call loans. If small banks generally throughout the country adopted Mr. Dunning's attitude as the basis for loans upon real estate or building, there would be very little left of the housing problem. Building would proceed normally.

NOR would the labor element enter seriously into the matter, provided money was available for building. There has been a recent reaction in the labor situation, which is strikingly shown in the refusal, by 12,000 workers in a large manufacturing concern in Baltimore of higher wages. Labor leaders, as shown by Samuel Gompers' advice to the workers of New York City to "clean house," are realizing that high wages without consequent high efficiency, are not feasible. Labor generally seems to have realized that the wage scale must correspond to the production scale, and that inefficiency or underproduction has its direct and immediate effect upon commodities, upon stock markets, and upon the finances of a nation. Production must be paid for in cash; and cash expended for a given commodity, such as labor, must be returned in full value, or suffer actual loss in its value. And the conservative element among labor leaders seem to be striving to impress labor generally with the soundness of this argument, with a consequent reduction in wages.

(Special Correspondence to The American Architect)

Boston.—As far as underlying conditions of New England business are concerned, there is as yet no evidence that the readjustment to lower commodity price levels is completed.

It is evident here in New England that confidence in the current price structure is still lacking and that there is a distinct tendency all along the line, from manufacturer to consumer, to withhold buying until the ultimate low prices are reached. This feeling results in diminished activity in all lines of trade, curtailment of production and increased unemployment. There is hardly a day goes by but what some large New England concern, especially in textile lines, announces a reduction of working days. This, of course, has had the effect of cutting down the number of new industrial buildings for which contracts have been let.

At Plainville, and Hartford, Conn., there are housing developments well under way that will probably total ninety houses of one and two family size.

The report from the Superintendent of the Boston Public Employment office shows a big decline in business. The records show a decrease of 22 per cent. in the orders from employers, and a decrease of 26 per cent. in (compared with September) the number of people wanted by employers.

(Special Correspondence to The American Architect)

SEATTLE.—The mental attitude of investors, architects, contractors, and jobbers in building materials in this section of the country has been recently changed sufficiently to move jobs in the incipient or theoretical stage to the conclusive stage of development; but any sudden inclination in the direction of what was once known as "boom" proportions is not expected. There will be no definite improvement in the situation this year, and a majority of operators on the coast have fixed upon March 1 as the probable date of the building revival. None doubt that it will be of gigantic proportions, once prices are at bottom and confidence restored.

Inquiries from home builders and investors are visibly increased. There is a brighter aspect to finance. Change is in the air. Why this is so, no one can say, but with the shift in the mental attitude, there came spots of improvement in conditions. For some inexplicable reason the supply of cement, which has been abnormally scarce for more than 90 days was suddenly raised to the point where jobbers are able to take care of all orders. Warehouses have been slowly filling with plaster, brick of all kinds, roofing, plaster wall board, steel pipe and nails. This was due in part to the fact that steel that had been on the road was now arriving, but cement used here is manufactured within 125 miles of the city, and despite the assertions of manufacturers there has been a severe shortage. Inquiry and investigation by jobbers this week developed the fact that the two plants that closed last spring did not resume, and the 200,000 barrels on hand at the time were cleaned up, leaving two plants, one of which was exporting heavily to the Orient, to attempt to take care of the construction trade after road work had been given

XUM

priority. The export demand has suddenly ceased and the product is now arriving at warehouses along the coast.

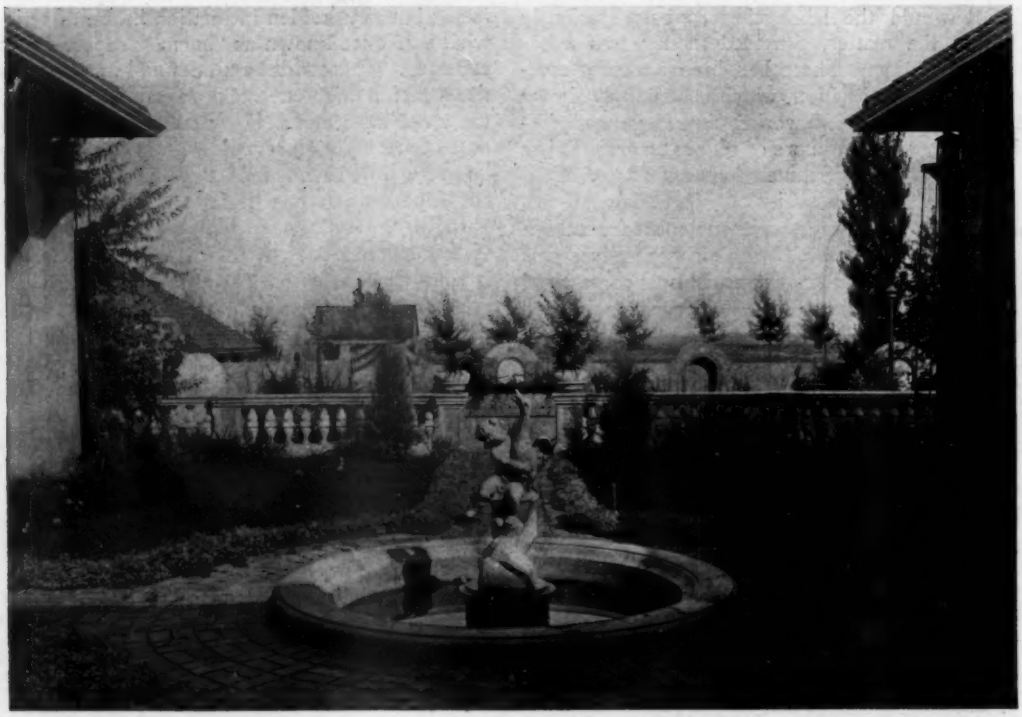
The earliest possible date at which building projects can be revived, according to the best judgment of operators here, is March 1. The demand of investors now is for lower prices in building materials, and while there are no present symptoms of declines, jobbers are able to report that stocks are accumulating, and that if buyers refuse to trade at this level, stocks at the mills will pile up and price declines inevitably follow in time for the spring demand. The start for the new construction year is expected by Coast operators to be slow. Stock taking and the early year dull period will prevent any normal reaction until March, it is felt, but nowhere is there any doubt that once begun the shortage of homes, and Class A office buildings will be active.

The pipe situation is easier. Considerable has been arriving by water, including the small sizes of which the Coast is in great need. Within 30 days jobbers expect to see a normal supply. All orders for nails can now be comfortably absorbed.

Defeat of the Carlyon Bill, which planned 1,500 miles of road construction in the state for six years, using 800,000 barrels of cement annually, greatly eased the cement situation.

The lumber market is lower, despite the general impression a week ago that it had struck bottom. No. 2 vertical grain fir flooring, 1 x 4, at the mill, is $54 to $64, against $58 a week ago, but No. 2 and better slash grain is moving from the mill at $34 to $36.50, against $37 a week ago. Five eighths ceiling No. 2 and better is $31 to $38, against $33 to $40 for the week previous. Boards and shiplap are $17.50 to $19.50, against $19 to $27.50 a week ago. In dimension, the key size, the market has fallen sharply. No. 1, 2 x 4, 12-14, is now $14 to $14.50, against $18.50 a week ago. Wholesalers claim to be offered No. 2 dimension at $12.

Red cedar shingles are stronger at $3.15 to $3.25 for clears, and $2.45 to $2.50 for stars. Eighty per cent. of the entire cedar shingle mill capacity of the West Coast territory is down. Wholesalers are about to advance their quotations to the trade.



PATIO
HOUSE OF GEORGE E. CRANMER, DENVER, COLORADO
J. B. BENEDICT, *ARCHITECT*